READING MATERIAL

NATIONAL LAW SCHOOL OF INDIA UNIVERSITY (NLSIU)

CENTRE FOR ENVIRONMENTAL LAW EDUCATION, RESEARCH AND ADVOCACY (CEERA)

In Association with

ANDHRA PRADESH POLLUTION CONTROL BOARD

Organises

FOUR - DAY ONLINE TRAINING PROGRAMME IN TWO BATCHES

ON

"ENVIRONMENT LEGISLATIONS, INTERPRETATION, ENFORCEMENT, LEGAL AND STATUTORY REQUIREMENTS – CASE STUDIES"

DATES

BATCH 1: 1ST TO 4TH DECEMBER, 2020

BATCH 2: 7TH TO 10TH DECEMBER 2020

CENTRE FOR ENVIRONMENTAL LAW, EDUCATION, RESEARCH AND ADVOCACY, (CEERA)

NATIONAL LAW SCHOOL OF INDIA UNIVERSITY, BENGALURU

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PROGRAMME SCHEDULE

BATHC II

DATE:

7th TO 10th DECEMBER, 2020

VENUE:

ZOOM VIDEO CONFERENCE

TIME	DAY ONE: 7th DECEMBER, 2020
2:30-3:00 PM	Setting the agenda for the training programme **Mr. Vivek Yadav, IAS,** **Member Secretary,** **Andhra Pradesh Pollution Control Board** **Prof. (Dr.) Sairam Bhat,** Professor of Law& Coordinator, CEERA, NLSIU
3:00-4:00 PM	Introduction to Environmental legislations in India **Prof. (Dr.) Sairam Bhat,** Professor of Law & Coordinator, CEERA, NLSIU **Mr. Rohith Kamath**, Company Secretary & Advocate, REX Law Chambers
4:00-5:00PM	Constitution and Environmental Protection **Prof. (Dr.) M.K. Ramesh,** Professor of Law, NLSIU
5:00-6:00PM	Common and Criminal Law Remedies **Prof. (Dr.) Sairam Bhat,** Professor of Law & Coordinator, CEERA, NLSIU **Ms. Geethanjali K. V**, Legal Associate, NLSIU
6:00-6:30PM	Case Study: Principles of Environmental Law **Mr. Vikas Gahlot,** Teaching Associate, CEERA-NLSIU **Mr. Rohith Kamath,** Company Secretary & Advocate, REX Law Chambers

TIME	DAY TWO: 8th DECEMBER, 2020
2:30-3:45PM	Water Act, Air Act and Role of PCB **Prof. (Dr.) M.K. Ramesh,** Professor of Law, NLSIU **Mr. Vikas Gahlot**, Teaching Associate, NLSIU
3:45-5:00 PM	Redefining the Functioning of PCBs **Mr. MDN Simha,** Member Secretary (Retd.) Karnataka State Pollution Control Board
5:00-6:00PM	Interpretation of Statues/Rules in Environmental legislations **Prof. (Dr.) M.K. Ramesh,** Professor of Law, NLSIU **Mr. Rohith Kamath**, Company Secretary & Advocate, REX Law Chambers
6:00-6:30PM	Case Study: AOL **Mr. Vikas Gahlot,** Teaching Associate, NLSIU **Mr. Raghav Parthasarathy,** Teaching Associate, NLSIU

TIME	DAY THREE: 9th DECEMBER, 2020
2:30-3:45PM	Waste Management and Responsibilities of Officers vis-a vis E-Waste and Plastic Waste **Mr. Hemant Bagai,** Managing Director, Terrapro Recycling Solutions Pvt., Ltd.

3:45-4:30PM	Regulations with respect to Waste Management and Business **Mr. Shujath Bin Ali** General Counsel & Chief Compliance Officer RAMKY Group
4:30-5:15PM	Environmental Litigation: National Green Tribunal **Prof. (Dr.) Sairam Bhat,** Professor of Law& Coordinator, CEERA, NLSIU **Mr. Raghav Parthasarthy**, Teaching Associate, NLSIU
5:15-6:00PM	Application and interpretation of International Environmental Law in India **Prof. (Dr.) S. Nataraju,** Principal, JSS Law College, Mysuru
6:00-6:45PM	Chemical Accidents And Waste Management **Prof. (Dr.) Sairam Bhat**, Professor of Law & Coordinator, CEERA, NLSIU **Ms. Madhubanti Sadhya,** Teaching Associate, NLSIU

TIME	DAY FOUR: 10th DECEMBER, 2020
2:30-3:30PM	Corporate Environmental Responsibility **Mr. Nandakumar Krishnachar,** Head-Legal, Syngene International Ltd.
3:30-4:30PM	Ozone Management and Cleaner Technology **Dr. Srinivas Ravindra** CEO & Co-Founder, Ecochoice Naturals Pvt. Ltd.

4:30-5:30PM	Environmental Protection Act **Prof. (Dr.) Sairam Bhat,** Professor of Law & Coordinator, CEERA, NLSIU **Ms. Lianne D'Souza,** Research Fellow, CEERA-NLSIU
5:30-6:30PM	Environmental Fines and Corporate Compliances with the PCB **Mr. Nawneet Vibhaw,** Partner, Shardul Amarchand Mangaldas & Co.
6:30-7:15PM	MCQ and Feedback **Mr. Rohith Kamath,** Company Secretary & Advocate, REX Law Chambers **Ms. Lianne D'Souza,** Research Fellow, CEERA-NLSIU

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The Elimination of the Corporate Environment Responsibility Requirement: An Analysis*

INTRODUCTION

On September 30 2020, the Ministry of Environment, Forest and Climate Change (MoEF&CC) issued an Office Memorandum (OM) that has superseded another Memorandum dated May 1 2018.[1] The 2018 OM had mandated that for gaining Environment Clearance (EC) for projects under the 2006 EIA Notification, specified funds under the label of Corporate Environment Responsibility (CER) be allotted to specified purposes by the project proponent.[2] The recent Memorandum has removed this requirement. Instead, the Expert Appraisal Committees (EACs) deliberating on the project have been mandated to prescribe "*specific condition(s) in physical terms*" for the project proponent to follow, these conditions forming part of the Environment Management Plan (EMP) prepared under the clearance process.[3] Given that EMPs and requirements under the same were part of the process even earlier, the recent Memorandum has effectively served only to remove the additional requirement of CER imposed through the 2018 OM.

However, the recent Memorandum does not provide any concrete reasons that necessitated this removal. It merely mentions that the Ministry had received "*several representations*" against the 2018 OM, and the same had also been challenged in the Delhi High Court. Consequently, the Ministry examined the matter and settled on this course of action. This removal signifies a diametrical shift in the approach towards the CER requirement as compared to the Draft EIA Notification 2020 released earlier this year. In the draft 2020 EIA Notification, the requirement of CER had been mentioned and hence upheld, and the MoEF&CC had been tasked with releasing guidelines regarding the same from time to time.[4] This change in stance should have been cogently justified. Further, the impact of such a dilution on the environment should have been assessed and explained. In the absence of such an explanation or assessment by the MoEF&CC, the 2020 OM, and the place and importance of CER in the EC process, need to be examined to gauge the justifiability of the repeal.

The aim of this piece is to first examine the place and contours of the requirement of CER in the EIA process. It then analyses some criticisms of the CER requirement as expressed by some stakeholders, both regarding the provisions and the implementation of the same. The

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* Prof.(Dr.) Sairam Bhat, Professor of Law and Coordinator, CEERA, NLSIU, Madhubanti Sadhya, Teaching Associate and Saumya Singh, Second Year, NLSIU, Bengaluru

[1] Office Memorandum by the Ministry of Environment, Forest and Climate Change on "Deliberations on the commitments made by project proponent and requirements to address the concerned raised during the public consultation and prescribe as specific condition(s) while recommending the proposal, for prior environment clearance, in physical terms in lieu of Corporate Environment Responsibility (CER)- regarding." (September 30, 2020).

[2] Office Memorandum by the Ministry of Environment, Forest and Climate Change on "Corporate Environment Responsibility (CER) – reg." (May 1, 2018).

[3] *Supra* note 1.

[4] *Draft EIA 2020*, MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, http://environmentclearance.nic.in/writereaddata/Draft_EIA_2020.pdf, § 15(9).

article also analyses some of the ECs granted, and Compliance Reports for, some projects. Finally, it assesses whether the removal of the requirement, and the manner in which it was undertaken, was justified, and some alternative approaches towards CER that could have been adopted.

ABOUT THE CORPORATE ENVIRONMENT RESPONSIBILITY (CER) REQUIREMENT

Theoretically, CER is defined as "*the duty of the corporation to mitigate its impact on the natural environment*". This responsibility is considered part and parcel of Corporate Social Responsibility (CSR),[5] a concept which encompasses the duties of the corporation towards society.

However, in the 2018 and 2020 Memoranda, CER has been used to denote a particular mandatory condition to be fulfilled by companies for gaining ECs under the EIA framework provided under the EIA Notification 2006. This is not the only requirement that has been imported into the EIA process under the label of CER. Another such requirement was imposed through a set of OMs issued in 2011 and 2012. Under that requirement, some specified types of project proponents were required to formulate 'Corporate Environmental Policies' for the protection of the environment, and to set up mechanisms to ensure adherence to this policy and the conditions mentioned in the EC.[6]However, for the purposes of the recent Memorandum, it is the requirement imposed through the 2018 OM, and reaffirmed in subsequent OMs, that is pertinent.

The grant of ECs to projects is governed by the EIA Notification of 2006. Under this Notification, prior ECs are required by the projects specified under Section 2.[7] Such ECs are granted by the MoEF&CC (at the union level) or the State Environment Impact Assessment Authorities (SEIAAs) (at the State level), depending on the category of the project.[8] These clearances are granted only after the recommendation of the Union/State Expert Appraisal Committees (EACs/ SEACs). The body concerned conducts a four-stage process to assess the environmental feasibility of the project: the stages being screening, scoping, public consultation, and appraisal.[9]

It is at the stage of appraisal that the requirement of CER comes into the picture. At this stage, the body concerned conducts a detailed scrutiny of the project proponents' application, as well as other relevant documents such as the final EIA report (prepared by the proponent in the first three stages).[10] The recommendation for the grant of EC is advanced after such scrutiny. Section 7(IV)(i) of the EIA Notification 2006 mandates that if such a recommendation is made, the *stipulated terms and conditions* must also be specified with the

[5]Shishir Tiwari & Gitanjali Ghosh, *Governance of Corporate Environmental and Social Responsibilities in India: Sketching the Contour of Legislative Evolution and Reforms*, 6(1) IMJ 35, 37 (2014).
[6]Office Memorandum by the Ministry of Environment, Forest, and Climate Change on "Corporate Environment Responsibility." (April 26, 2011).
[7]Notification number S.O. 1533 2006 § 2.
[8]*Id.*
[9]*Id* § 7.
[10]*Id* § 7(IV).

same. Further, the minutes of the EAC meeting shall list out the *specific environmental safeguards and conditions* prescribed by the EAC.[11]

The 2018 Memorandum incorporated CER as a mandatory requirement for every project proponent to be granted EC. Under this condition, a specified percentage of the total capital investment undertaken in a project was to be channelled into specified activities such as sanitation, health, and education, in the "*affected area*" around the project.[12] This investment was to be independent of the capital spent in compliance with any other requirement under the EIA/ any other statute.[13] The exact quantum of the CER investment was to be decided by the EAC on a case to case basis, based on "*due diligence*": the Memorandum only specified the maximum permissible levy, the upper limits varying based on (a) the total capital investment in the project (b) whether the project was greenfield or brownfield.[14] Further, in case any modification was sought in an existing EC, CER was to be levied only if any additional capital investment was being undertaken by the project proponent, as a percentage of the additional expenditure.[15] On the level of enforcement, the activities to be undertaken by the proponent were to be treated as a 'project', and the allocated funds were to be utilised in the same directly. The status of the CER activities was to be reported as part of the half-yearly Compliance Reports that need to be submitted by project proponents to show the level of compliance with the requirements imposed by the EAC.[16]

As apparent above, the legal requirement of CER is different, and separate, from the *Corporate Social Responsibility (CSR)* requirement that companies must comply with under Section 135 of the Companies Act. There are indeed certain similarities between these requirements, especially in terms of the activities that can be invested in, in discharge of the CER and CSR obligations. Both include areas such as education, health, sanitation etc.[17] Secondly, while making CER investments in the project affected area is mandatory, CSR expenditures should also preferentially be made in *"local area and areas around where it operates*".[18]However, despite this overlap, they remain different statutory requirements, and as discussed earlier, the CER requirement operates independently of all other statutory requirements. Hence, both have to be complied with independently. Further, while only companies crossing certain thresholds in terms of net worth or turnover or net profit are required to undertake CSR activities, no such eligibility conditions have been prescribed for CER. The 2018 OM only mentions that some project proponents might not be eligible for CSR because of these eligibility thresholds; it does not prescribe any such threshold for CER itself.[19]

[11]*Id* § 7(IV)(i), Appendix 5.
[12]*Supra* note 2, at § 6.
[13]*Id* § 6(I).
[14]*Id* § 6(II).
[15]*Id* § 6(IX).
[16]*Id* § 6 (VI).
[17]Companies Act 2013 sch VII; *Supra* note 2 § 6(V).
[18]Companies Act 2013§ 135.
[19]*Supra* note 2, § 3.

As mentioned in the 2018 OM, the CER framework has been the subject to much criticism, regarding both the content of its provisions and the implementation of the same. These issues need to be examined, to analyse whether the elimination of the CER requirement was justified.

CRITICISMS OF THE CER REQUIREMENT AND CRITICAL ANALYSIS OF THE 2020 OM

The first criticism regarding the CER focuses on the form of executive action through which the same was implemented: an Office Memorandum (essentially a piece of communication between a MoEF&CC officer and the authorities concerned). The EIA Notification does not specifically mention CER. As discussed earlier, the only EIA provisions to which CER can be traced are the general provisions that mandate certain environmental safeguards for EC to be granted. Hence, it has been argued that the MoEF&CC's approach of introducing an entirely new (and significantly onerous) financial responsibility, without any statutory backing, was untenable.[20] This lacuna was recognised and remedied in the Draft EIA Notification 2020, which specifically makes provisions with respect to CER. However, as the law stood before the repeal, CER had no statutory backing.

The second criticism relates to the scope of the activities for which CER expenditure can be made, as mentioned under Guideline 5 of the 2018 OM. These activities cover a broad range, including drinking water supply, health, sanitation etc.[21] However, one common thread that runs through them is that they focus mainly on social and economic development, instead of focusing on the environment *per se*. The inclusion of more, environment-centric activities, such as technological innovation for finding a viable alternative to plastic bags, was one of the improvements sought by Anup Kumar through a 2018 writ petition filed in the Delhi High Court.[22] Even though the list of activities prescribed under Guideline 5 is an inclusive list, some EACs have restricted themselves to prescribing the activities under the same as part of the CER requirement. This was the case for the EC granted to Ultratech for its Integrated Cement Plant in Kurnool in 2019, where the activities prescribed included only those related to social development (such as education and social causes),[23] and did not include any activities benefitting the environment. Hence, the scope of activities under Guideline 5 is problematic.

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[20] Chandra Bhushan, *Green Responsibility order achieves little*, FINANCIAL EXPRESS, (May 23, 2018, 3:13 AM), https://www.financialexpress.com/opinion/green-responsibility-order-achieves-little/1177517/.

[21] *Supra* note 2,§ 6(V).

[22] *PIL seeking modification of guidelines issued by MoEF on Corporate Social Responsibility: Delhi HC issued notice*, INDIA LEGAL, (May 30, 2019), https://www.indialegallive.com/delhi-high-court/pil-seeking-protection-natural-environment-including-forest-lakes-rivers-wild-life-delhi-hc-issued-notice/.

[23] *Integrated cement plant (clinker 4.0 MTPA, cement 6.0 MTPA, CPP 60 MW and WHRB 15 MW) of M/s UltraTech Cement Limited located at Village Petnikote, Mandal Kolimigundia, Dist.Kurnool, Andhra Pradesh. – Environmental Clearance regarding*., MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, (October 6, 2020, 11:50 PM),http://environmentclearance.nic.in/writereaddata/Form-1A/EC/052720191Ultratech404-2011ECLr.pdf, para 18.

The first criticism gains further credence in the light of the second. As the 2018 Memorandumstood, the MoEF&CC had essentially prescribed socio-economic safeguards through CER, putting the same outside the purview of the *environmental safeguards* prescribed under the EIA Notification.

The third criticism stems from the second. The focus of Guideline 5 on activities relating to social and economic development has led to a significant overlap with CSR. This has led to two criticisms of the 2018 Guidelines. Firstly, it has been argued that through the CER requirement, the MoEF&CC is indirectly controlling the company's CSR expenditure. There is hence a overstep of jurisdiction, since CSR is governed by the Companies Act.[24]This criticism is not strictly tenable, given that the CER requirement exists independent of the CSR one (and hence the MoEF&CC is not controlling the company's CSR expenditure in the strict sense). However, the point regarding the overstep of jurisdiction is relevant more broadly as CER is indeed highly similar to CSR in terms of the activities to be undertaken. Secondly, it has been argued that in the current system, a company undertaking a project has to make overlapping investments, hence duplicating expenditure and complicating the situation on the ground. For a company carrying out a project, the Land Acquisition Act, 2013 imposes a requirement to carry out a social impact assessment and rehabilitation and resettlement. Hence, there is a necessary investment in social and economic infrastructure, with many of the heads of expenditure overlapping with the CER.[25] If a company fulfils the eligibility conditions for CSR under Section 135 of the Companies Act, it will have to undertake CSR expenditure as well, on mostly the same activities as CER. Some companies are also required to allocate funds for compensatory afforestation (under the Compensatory Afforestation Fund Management and Planning Authority (CAMPA)), independently of the CER framework.[26] Hence, the extant framework necessitates overlapping investment on similar activities which, according to the critics, prejudices the companies concerned.[27]

The fourth criticism relates to the lackadaisical implementation of the CER requirement, both at the stage of prescribing the activities to be undertaken, as well as enforcement. For analysing these aspects, the ECs granted to, and compliance reports filed for, four projects have been analysed:

1. Ultratech's Integrated Cement Plant in Kurnool (EC granted on May 24 2019);[28]
2. Shree Cement's Integrated Cement Plant in Guntur (EC granted on May 20 2019);[29]

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[24]Nidhi Sharma, *Pay 2% of capital investment for green clearance: Environment Ministry to Corporates*, ECONOMIC TIMES, (May 03, 2018, 7:50 AM), https://economictimes.indiatimes.com/news/economy/policy/pay-2-of-capital-investment-for-green-clearance-environment-ministry-to-corporates/articleshow/64008830.cms.

[25]*Supra* note 20.

[26]*Green Blunder: The environment ministry's proposed Corporate Environment Responsibility spend for firms is a bad idea*, FINANCIAL EXPRESS, (May 4, 2018, 3:33 AM), https://www.financialexpress.com/opinion/green-blunder-the-environment-ministrys-proposed-corporate-environment-responsibility-spend-for-firms-is-a-bad-idea/1155204/.

[27]*Supra* note 20; *Id*.

[28]*Supra* note 23.

[29]*Greenfield integrated cement project consisting of clinker (2.4 MTPA), cement (4 MTPA), captive power plant (25 MW) and waste heat recovery power generation (15 MW) of M/s Shree Cement Ltd located at Village Pedagarlapadu, MamdalKarempudi, District Guntur, Andhra Pradesh- Environmental Clearance regarding*.,

3. Sree Rayalaseema Hypo Limited's Organic Chemicals plant (EC granted on February 4 2019);[30]
4. ONGC's Onshore Oil Production Facility in Assam (EC granted on May 1 2019).[31]

A total of 6 Compliance Reports have been analysed, one from Ultratech for its Kurnool project and two each from the other project proponents for their respective projects.

A perusal of the ECs reveals that only in the case of project 1 were the activities to be undertaken specified, and the expenditure to be made under each head earmarked.[32]With respect to projects 2, 3, and 4, no such guidance was given by the EAC, leaving the expenditure completely on the project proponents' discretion. The ECs for projects 3 and 4 mention that the project proponents concerned had been directed to submit "*item wise details along with time bound action plan*" regarding the CER expenditure, to the MoEF&CC's Regional Office.[33] However, these plans appear not to have been formulated, given that they have not been mentioned in any of the compliance reports filed by these proponents. This lack of specification of activities is a breach of the EAC's mandate under the 2018 OM, which requires that the EAC concerned "*should clearly suggest the activities to be carried out under CER*".[34] Further, with respect to the latter projects, the exact amount to be spent under CER was mentioned only in the EC granted to project 2.[35] The ECs for projects 3 and 4 only mention that *at least* 2% (and 1.5% respectively) of the total project cost had to be allocated for CER.[36] The use of 'at least' leaves the exact amount indeterminate, making compliance difficult; and the lack of the specification of the amount and the activities to be undertaken suggests that the delineation of the CER requirement was not given due consideration in these cases. Besides, the prescription of at least 2% of the project cost was impermissible under the 2018 OM, given that 2% was the maximum amount that could be prescribed.

A perusal of the Compliance Reports filed by the various project proponents presents an even bleaker picture with respect to implementation. In 5 of the 6 compliance reports analysed, some of them filed a year after the grant of EC, there exists only an assurance that the CER requirements *will be complied with*.[37] Only in the Compliance Report filed by ONGC in

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MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, (October 6, 2020, 11:40 PM), http://environmentclearance.nic.in/writereaddata/Form-1A/EC/052320191ShreeCement165-2014ECLr.pdf.

[30]*Expansion of Synthetic organic chemicals and co-generation power plant by M/s Sree Rayalaseema Hi-Strength Hypo Limited at Village Gondiparla, Mandal & District Kurnool (Andhra Pradesh) – Environmental Clearance – reg.,* MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, (October 6, 2020, 11:20 PM), http://environmentclearance.nic.in/writereaddata/Form-1A/EC/02222019182_2016_SreeRayalaseema_Letter.PDF.

[31]*Onshore development and production of oil and gas from six wells in 5 Mine Lease Blocks in Districts Jorhat and Golaghat (Assam) by M/s Oil and Natural gas Corporation Ltd- Environmental Clearance – reg.,* MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, (October 6, 2020, 11:30 PM), http://environmentclearance.nic.in/writereaddata/Form-1A/EC/05022019149_2014_ONGC_Letter.PDF.

[32]*Supra* note 23.

[33]*Supra* note 30 para 9(p); *Supra* note 31 para 10(xxi).

[34]*Supra* note 2, § 6(VIII).

[35]*Supra* note 29 para J(i).

[36]*Supra* note 33.

[37] All the compliance reports are available on http://environmentclearance.nic.in/Online_EC_Complience_Report.aspx.

December 2019 is there an acknowledgement that "*all relevant measure(s)*" have been undertaken with the involvement of the local villagers and the administration. However, no details of these activities have been provided, and the only activity that has even been mentioned is plantation.

This complete lack of implementation of the CER requirement stands in stark contrast with other measures being specified in the EC being implemented, and comprehensive details of the same being provided in the compliance reports concerned. Overall, there existed issues with the CER requirement on multiple levels: in the provisions of the 2018 OM, and especially at the level of enforcement.

Lack of enforcement, by itself, cannot be a justified ground for the repeal of the requirement. The only legitimate response to this issue is stricter implementation. However, keeping the various lacunae in the CER provisions in mind, the requirement was admittedly unsustainable, and its repeal was justified. It led to a significant rise in the costs of business, with the expenditure being routed towards the same activities as the project proponents had already undertaken under other statutory requirements (such as CSR). Further, this significant additional burden had no statutory backing.

An alternative approach on part of the Government could have been to address the various concerns raised by stakeholders via amendments in the framework. The first concern could have been addressed by amending the EIA Notification to provide CER with statutory backing. The concern related to the scope of the activities to be undertaken under CER could have been addressed by shifting the focus from activities related to socio-economic development to environment-centric activities, such as the creation of recycling facilities in the areas concerned. This shift would also have addressed the third concern to a large extent, as the extant overlap between the CER and CSR obligations would then be addressed.

However, any such amendments would have had to balance the interests of the project proponents with environmental concerns. The additional burden imposed by CER cannot be so onerous as to make developmental projects unfeasible for proponents. Hence, if the CER levy under the 2018 OM were to be sustained, the same would have required significant amendments taking these factors in account.

Another alternative approach to making the CER requirement sustainable could have been to change the scope and nature of the same. For example, CER could be remodeled to mandate a Bank Guarantee on part of the project proponents, to ensure compliance with the conditions mentioned in the EC. Since bank guarantees are security deposits payable only if certain conditions (in this case, conditions mentioned in the EC) are not fulfilled, this requirement would be much less onerous for proponents. Further, CER in this form would have a much more tenable connection to the environment than the socio-economic activities that were mandated under the 2018 OM.

CONCLUSION

On analysing the requirement for CER as mandated under the EIA process through a 2018 Office Memorandum issued by the MoEF&CC and the different concerns raised by various

stakeholders regarding the same, including the recent repeal of the CER requirement as mandated by the Office Memorandum issued by the MoEF&CC dated 30 September, 2020 the following observations are made:

- The CER requirement had been introduced as part of the EIA process. It mandated the companies concerned to set aside a specified percentage of the project costs for specified activities. The exact percentage and activities were to be decided by the EAC concerned, during the appraisal stage of the four-stage EIA process. The activities were to be undertaken by the project proponents directly as projects. Hence, there was no fund set up to collect CER contributions, and CER expenditures were made by the companies directly.
- There were various legitimate concerns raised by various stakeholders regarding the requirement. The same were:
    - The CER requirement had been introduced without statutory backing, under an OM, despite finding no mention in the EIA Notification;
    - The CER activities prescribed under the 2018 OM aimed mostly at socio-economic development of the areas concerned, and not environment conservation;
    - Because of the above there was a significant overlap and similarity between CER and CSR obligations (under the Companies Act). There exists no formal clarification regarding whether CSR expenditures could be offset using CER payments on similar activities, or vice versa. However, given that CER under the 2018 OM was conceived as independent of other statutory requirements under the EIA process/ any other statutes, the most tenable interpretation is that both these expenditures had to be undertaken independently. Hence, project proponents meeting the eligibility conditions for CSR had to undertake multiple expenditures for similar activities. Further, expenditures on similar activities had to be undertaken under the Land Acquisition Act, 2013 as well. Some project proponents were also required to contribute funds towards compensatory afforestation.
    - There was a lackadaisical implementation of the CER requirement by the Government, at the level of first, the EAC's prescription of the total expenditure to be undertaken under CER, and the activities to be undertaken; and second, the enforcement of CER obligations on part the project proponents.

- While implementation issues cannot be grounds for the repeal of the requirement itself, the concerns mentioned in the aforementioned points justify the elimination of the requirement. The same led to a significant rise in costs of business, with the expenditure being routed towards the same activities as the project proponents had already undertaken under other statutory requirements (such as CSR). Further, this significant additional burden had no statutory backing.

- Other alternative approaches towards CER could have been first, through the prescription of more environment-centric activities, while ensuring that the requirement did not prove excessively onerous for project proponents; and second

remodelling CER as a bank guarantee to be undertaken by the project proponent to ensure compliance with the conditions mentioned in the EC.

A Tribunal in Trouble?

Prof. Dr. Sairam Bhat and Lianne D'Souza[1]

The year 2011 marked the beginning of a truly historic era for environmental litigation in India as for the first time a quasi-judicial body, with a much wider mandate than that of its predecessors, was created to exclusively handle environment related matters. The National Green Tribunal (NGT), was established under the mandate of the National Green Tribunal Act, 2010 (NGT Act), as "a specialized fast-track body equipped with the necessary expertise to handle environmental disputes, especially those that were only 'civil', involving multi-disciplinary issues in an effective and expeditious manner."[2] The NGT was thus constituted as a judicial saviour that would revive the momentum for environmental litigation and environmental justice in India. Ten years into the NGT Act, much to its credit, the NGT has demonstrated tremendous efforts to espouse the causes for which it was instituted. However, during the recent past, it cannot be denied that several impediments have stood in the way of its effective functioning. Is the green tribunal in trouble? The answer to the same is partially in the affirmative.

Judicial and Administrative Fallacies

To many, it may come as a surprise that some of the shortcomings that wrought the NGT may be credited to its own making. The order of the Tribunal in the *LG Polymers* case, for instance, indicates the inadequate quality of decision making, wherein the Tribunal found the erring company responsible for the environmental damage and consequential loss resulting from the devastating gas leak under both principles of strict and absolute liability.[3] This finding resonates a certain flaw considering the obsolete nature of the doctrine of strict liability in devastations having dire consequences for the environment and health . As laid down in the landmark judgement of *M.C. Mehta v. Union of India***,** situations that involve hazardous and inherently dangerous activities automatically warrant the application of the principle of 'absolute liability'[4]; for which reason, the very fact that the NGT even considered the doctrine of strict liability in this case calls for serious introspection by the Tribunal. A green tribunal in India, is expected, not only to cherish Indian judiciary's remarkable contribution of the absolute liability principle to environmental jurisprudence, but also to significantly contribute towards its application to industrial accidents which have resulted in loss of life and damages to the environment.

However, the tribunal seems to be suffering on another account. During its ten years of functioning, the NGT, despite much criticism, is supporting the growing trend of disposing of

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[1] Dr. Sairam Bhat is a Professor of Law, NLSIU and Coordinator of CEERA, NLSIU. Ms. Lianne D'Souza is a Research Fellow, at CEERA NLSIU.

[2] About the NGT, Available at https://greentribunal.gov.in/about-us, (last accessed on 24.08.20)

[3] *See*, LG Polymers India and Ors. vs. Union of India and Ors. (01.06.2020 - NGT) : MANU/GT/0200/2020 ¶28, 29, 34.

[4] 1987 SCR (1) 819.

cases by setting up Committees, which assist the tribunal.[5] In light of the time-bound scheme envisioned by the Act,[6] it would be most appropriate for the Tribunal to expedite cases by disposing them within a strict time frame. Given that the NGT being an expert body itself, the shift of the burden to another expert body or committee, to address the pending case load emphatically dilutes the functions and prominence of the NGT.

Besides this, certain administrative issues also plague the system. For instance, ministerial attempts to transfer cases[7] on arbitrary grounds have made it harder for litigants to knock on the doors of the Tribunal. The case of *The Goa Foundation and Ors. v. Ministry of Environment, Forest and Climate Change and Ors.,* where the Bombay High Court struck down a Central Government Notification that had transferred Goa's environment related cases from Pune to Delhi on spurious grounds, is one such striking example [8]

Similarly, the persistent problems of shortage of manpower, limited number of benches together with staggering number of vacancies by and large stand in the way of expediting the hearing and disposal of cases. As the NGT is the sole adjudicatory body exclusively vested with powers to settle environmental disputes, it is only prudent and reasonably expectable that it be easily accessible to the masses. Accessibility, here, not being limited to financial and procedural convenience but also being construed in terms of territorial or geographical reach, because as the Supreme Court has observed, "the denial of access to justice also takes place when a litigant has to spend too much money, time and effort to approach the adjudicating authority to get justice."[9] Interestingly, the organisational structure of the NGT demonstrates that it was proposed to be set up with five places of sitting *i.e.* the Principal Bench at Delhi along with 4 Zonal benches at Chennai, Pune, Kolkata and Bhopal and 4 Circuit Benches.[10] Unfortunately, due to lack of regular appointments and shortage of personnel, the zonal benches have been rendered virtually non-functional with no regular hearings taking place.[11]

In addition to these structural inadequacies, the picture grows grimmer considering the alarming number of vacancies in the existing benches. The issue of vacancies is not a new one. Indolence towards capacity building has time and again hindered the overall performance of judicial and quasi-judicial institutions. This being stated, the state of affairs in the NGT is rather 'appalling' as even the Apex Court has displayed serious concern for this predicament.[12] Despite the Act expressly mandating a minimum of 10 full time judicial members and expert

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[5] NGT's New Approach to Pending Cases Raises Eyebrows, available at https://www.thehindu.com/news/cities/Delhi/ngts-new-approach-to-pending-cases-raises-eyebrows/article24787684.ece (last accessed on 28.08.20)

[6] *See* Rule 18(3), NGT (Practice and Procedure) Rules, 2011. Rule 18(3) - Every application or appeal shall be heard and decided finally, as far as possible within six months from the date of filing an application or appeal, as the case may be.

[7] *See* Section 4(3), NGT Act, 2010.

[8] 2018 (1) BomCR 232.

[9] Rojer Mathew vs. South Indian Bank Ltd. and Ors. (13.11.2019 - SC): MANU/SC/1563/2019

[10] Id.

[11] *See* observation of the Supreme Court in Rojer Mathew vs. South Indian Bank Ltd. and Ors. (13.11.2019 - SC) : MANU/SC/1563/2019, para 381.

[12] NGT Bar Association (Western Zone) vs. Union of India and Ors. (23.07.2020 - SC Order): MANU/SCOR/33625/2020

members,[13] the number of vacancies were seven and six respectively.[14] In light of this, the dismay of the Apex Court is unsurprising as the NGT, for a substantial time, has been functioning at less than half of its required capacity. Recently, the Supreme Court has taken proactive measures to meet this dire situation by ordering to expedite the selection process of members to the NGT.[15]

Clipping the 'wings': Defining the Jurisdictional scope of the NGT

If structural inadequacies are not concerning enough, Constitutional Courts have also brought to the fore serious limitations of the NGT. As the NGT is a specialized tribunal empowered to deliberate upon a specific category of matters, it would be correct to deduce that its scope is inherently limited by the NGT Act 2010. Furthermore, the fact that orders from the NGT are directly appealable to the Supreme Court,[16] the NGT is placed on the same footing as that of the High Courts, albeit with the exception of writ jurisdiction.

Interestingly, despite the functioning of the NGT on all 'environmental matters', various High Courts have freely invoked their inherent powers under their plenary jurisdiction[17] and are disposing matters without referring the same to NGT. This position of High Courts entertaining environmental matters under their power is not entirely, inappropriate. However, this only encourages litigants to file claim before the Writ court's, whose remedies are more efficacious than that of the NGT. The High Courts, thus are subverting the expertise of what would have been a more competent forum. Such far-reaching powers of the High Courts, besides transgressing into the domain of specialised tribunals, also tend to undermine the authority of tribunals. As a matter of law, constitutional courts are inherently vested with the power of judicial review, that cannot be abridged or excluded by a statute.[18] This being stated, this power must be used sparingly so as to give full effect to the legislative intent with which special tribunals are established.

Jurisdictional Limitations and the NGT

The functioning of the NGT has also been marred by jurisdictional limitations. Since the highly embraced 'green court' is a creature of a statute, it derives its powers from its parent statute; more specifically, from the provisions that constitute Chapter III of the NGT Act. The general and presumably circumscribed jurisdiction of NGT is particularly rooted in Section 14 of the Act which empowers the Tribunal to entertain all civil cases which fulfil the twin pre-requisites mentioned thereunder, *i.e.* the case must involve a substantial question relating to the

[13] Section 4, NGT Act, 2010.
[14] Ngt Bar Association (western Zone) vs. Union of India and Ors. (14.08.2020 - SC Order) MANU/SCOR/35233/2020
[15] Ngt Bar Association (western Zone) vs. Union of India and Ors. (14.08.2020 - SC Order) MANU/SCOR/35233/2020
[16] Section 22, NGT Act. 2010.
[17] 2015 (6) ABR 524.
[18] L. Chandra Kumar vs. Union of India and others, (1997) SCC(LS) 577.

environment and such questions must pertain to the implementation of the specific enactments listed in Schedule I of the Act.[19]

Interestingly, situations have arisen where the limited jurisdiction of the NGT has further been restricted based on technical anomalies. Take the instance of *Techi Tagi Tara v. Rajendra Singh Bhandari case.* The Court grappled with the issue of whether the NGT was empowered to pass directions and issue guidelines with respect to the appointment of qualified personnel in the State Pollution Control Boards.[20] Negating the proposition, the Court held that the jurisdiction of the NGT is only limited to matters involving "a substantial question relating to the environment that must arise in a dispute and such question does not amount to an academic question." It further noted that in such cases, it is imperative to have "a claimant raising that dispute which was capable of settlement by the NGT by the grant of some relief which could be in the nature of compensation or restitution of property damaged or restitution of the environment and any other incidental or ancillary relief connected therewith."[21]

Similarly, in the case of *Mantri Techzone Pvt. Ltd. vs. Forward Foundation and Ors***,** the Supreme Court has analysed the question on the right of appeal under Section 22 of the NGT Act and the scope of enquiry in such an appeal. The Court has noted that Section 22 of the NGT Act affords the right of appeal to a party aggrieved by an order of the NGT on the grounds specified in Section 100 of the Code of Civil Procedure, 1908 (CPC). Section 100 of the CPC entails that an appeal can be filed only where a substantial question of law is involved. The determination of whether a question of law is 'substantial' or not would, in turn, necessitate an examination of its public importance, effect on rights of the parties, and the settled legal position in relation to such a question.[22]

The Supreme Court has also discussed its scope of enquiry in an appeal under Section 22 of the NGT Act. It has observed that the right to appeal granted under this provision does not *ipso facto* permit a party to seek re-appreciation of the factual matrix of the entire matter or the evidence therein, nor does it allow a party to re-argue its case in such an appeal. Thus, the Supreme Court has clarified that an appeal under Section 22 of the NGT Act cannot be treated as a matter of right unless it involves a substantial question of law.[23]

Scope of Review

Similar blows to the functioning of the NGT are evident in the limitations placed on its power of 'judicial review' for a tribunal. In the case of *Central India AYUSH Drugs Manufacturers Association and Ors. vs. State of Maharashtra and Ors.,* the Bombay High Court held that the NGT is not empowered to determine the question of vires of an enactment or rules framed thereunder, in respect of which it has powers to adjudicate.[24] The Court relied on precedents[25]

[19] Section 14, the NGT Act, 2010; Schedule 1 specifies an exclusive list of 7 statutes in relation to the implementation of which, the NGT shall exercise its jurisdiction
[20] (2018) 11 SCC 734.
[21] Id.
[22] Mantri Techzone Pvt. Ltd. vs. Forward Foundation and Ors, 2019(4) SCALE 218 ¶37.
[23] Mantri Techzone Pvt. Ltd. vs. Forward Foundation and Ors, 2019(4) SCALE 218 ¶38.
[24] AIR 2016 Bom 261.
[25] Alpha Chem and another v. State of U.P. and Ors, 1991 Supp (1) SCC 518, where the SC held that "the challenge to constitutionality of a statute is maintainable under Article 226 or Article 32 of the Constitution of India and it

to state "Parliament's intention to limit the power to decide certain specified nature of disputes is apparent. The scheme of N.G.T. Act does not permit National Green Tribunal to decide upon the vires of any of the enactments which confer appellate or other jurisdiction upon it nor empowers it to examine validity of any Rules or Regulations made under these enactments."[26]

Further, in the case of *Tamil Nadu Pollution Control Board v. Sterlite Industries ltd and ors.***,** the Supreme Court has strictly construed that the appellate jurisdiction of the NGT excludes the power of the Tribunal from entertaining matters not expressly provided under Section 16 of the Act.[27] In the instant case, the Supreme Court has vehemently laid down that "if an Appellate Authority under Air Act, 1981 or the Water Act, 1974, is either not yet constituted, or not properly constituted, 'a leapfrog appeal' to the NGT cannot be countenanced."[28] Rather, the permissible remedy against the original order would lie before the first appellate authority. Significantly, the Courts went on to hold that any order passed under Sec. 18 of the Water Act cannot be appealed before the NGT. This view of the court clearly narrows down the scope of the NGT to decide 'all' matter related to environment.

Out of 'trouble':

The idea of a special court to cater to environmental concerns in the country is undoubtedly a laudable one. But as far as the powers and functions of the NGT are concerned, there is no denying that the NGT is heavily weighed down by many impediments. Over and above the administrative lacunae, legal constraints also curb the efficient functioning of the Tribunal. It seems that just when the NGT has prepared to soar, its wings have been clipped. To address this predicament, first and foremost, it is incumbent on the responsible authorities to take active capacity building measures. Ensuring quality and integrity in appointments to the NGT, is the key to its success, this will not only expedite hearing and disposal of cases but will also realise the idea of environmental justice in its true sense.

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is not open in proceedings before authorities constituted under a statute itself or even in appeal or revision before the High Court from such proceedings"

[26] Central India AYUSH Drugs Manufacturers Association and Ors. vs. State of Maharashtra and Ors., AIR 2016 Bom 261

[27] *See* Section 16, NGT Act, 2010. Section 16 provided for the appellate jurisdiction of the NGT.

[28] Tamil Nadu Pollution Control Board v. Sterlite Industries ltd and or., AIR 2019 SC 1074. ¶ 45.

COASTAL REGULATION ZONE

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Environment (Protection) Act, 1986, ('EPA' hereafter), was enacted pursuant to the decision that was taken at the United Nations Conference on Human Environment which was held at the Stockholm in June, 1972. An urgent need to enact a general legislation to address the issues of environmental safety was felt necessary[1]. Activities to ameliorate the economic conditions have always been on the rise, permeating through the fragile ecosystems, endangering the life and livelihood of the inhabitants. Coastal ecosystem being no exception to such a development, jeopardised the marine life. In order to cater to the needs of growing population, resources available in coastal area have to be utilised. Therefore, protection of these resources becomes crucial. Accordingly, the Government of India exercising the power vested under EPA and Environment (Protection) Rules, 1986, ('Rules' hereafter) has issued notification to regulate the activities in and around the coastal areas across India. Coastal zones had to be regulated to prevent the deterioration and to bring within the legal framework the protection of coasts and other water bodies under the Coastal Regulation Zone (CRZ).

1. COASTAL REGULATION ZONE NOTIFICATION OF 1991

The first of the Notification was issued in the year 1991. The Coastal Regulation Zone Notification, 1991 (hereafter 'Notification of 1991') was notified exercising the powers conferred under Section 3(1) and 3(2)(v)[2] of EPA and Rule 5[3] of the Rules. The Central Government has placed certain restrictions on setting up and expansion of industries, operation of industries or processes, from operating in specific locations. Notification of 1991 is applicable to the coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters, influenced by the tidal action up to 500 meters from High Tide Line (HTL) and land between Low Tide Line (LTL). It mandated the State Governments and the Union Territories to draw up the Coastal Zone Management Plan (CZMP)[4] to identify and classify the Coastal Regulation Zone within their respective territories. Powers were also vested under the Notification of 1991 to the State Governments, Union Territories and Local authorities to regulate developmental activities within the CRZ. The Notification of 1991[5] mandated obtaining the permission of Ministry of Environment and Forests[6], Government of India for specific types of projects which included the construction activities related to defence requirements[7], operational constructions for ports and harbours and light houses[8], thermal power plants[9] and any other activities with investment over and above

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[1] Statement of Objects and Reasons, The Environment (Protection) Act, 1986, http://www.jkwildlife.com/act_pdf/Environment__Protection__ACT.pdf.

[2] Section 3. Power of Central Government to take measures to protect and improve environment, Environment (Protection) Act, 1986.

[3] Rule 5. Prohibition and Restriction on the Location of Industries and the Carrying on processes and operations in different areas

[4] Clause 3(1) of the Coastal Regulation Zone Notification, 1991.

[5] Coastal Regulation Zone and Regulating activities in the CRZ, 19th February, 1991, Ministry of Environment and Forests, http://environmentclearance.nic.in/writereaddata/SCZMADocument/CRZ%20Notification,%201991.pdf

[6] Clause 3(2) of the of the Coastal Regulation Zone Notification, 1991.

[7] Clause 3(2)(i) of the Coastal Regulation Zone Notification, 1991.

[8] Clause 3(2)(ii) of the Coastal Regulation Zone Notification, 1991.

[9] Clause 3(2)(iii) of the Coastal Regulation Zone Notification, 1991.

rupees five crores[10]. Coastal areas under the notification were also classified into four zones viz., CRZ-I, CRZ-II, CRZ-III and CRZ-IV.

CRZ-I – Areas that are ecologically sensitive and important such as national parks, marine parks, sanctuaries and other important biologically sensitive areas and of heritage or of historical significance and also included the area between the LTL and HTL. It also laid down prohibition on any construction within the 500 meters of the High Tide Line and allowed[11] for constructions for carrying treated effluents and waste water discharges into sea, facilities for carrying sea water for cooling purposes, oil, gas and similar pipelines and facilities for essential activities.

CRZ-II – Developed Areas[12] which are developed up to or close to shore line are classified under the second category. CRZ-II however allowed for construction and reconstruction of buildings, subject to respective laws and mandated that the said buildings shall be consistent with surrounding landscape and local architectural style.

CRZ-III – Areas not falling within CRZ-I and CRZ-II are classified under CRZ-III, which are in the rural areas and also those areas which are not substantially built up. Introduced the 'No Development Zone' upto 200 meters from HTL. It permitted activities like agriculture, horticulture, gardening, pasturing, parks, playfields, forestry and salt manufacture. However, no new construction was allowed and only repairs of existing structures were allowed. Between 200 meters and 500 meters of HTL allowed for hotels and resorts for tourists as provided under Annexure – II to the Notification, construction and reconstruction of dwelling units with specified measurements, along with alteration of existing authorised building.

CRZ-IV – Covered the islands of Andaman and Nicobar, Lakshadweep and other small islands except those under CRZ-I, CRZ-II and CRZ-III. Restrictions on construction within the 200 meters of HTL imposed and prohibited the use of corals and sand from beaches and coastal waters, dredging and under water blasting in and around coral formations.

In one of the landmark decisions, the Supreme Court upheld the demolition of the residential building constructed in violation of the CRZ Notification of 1991. In the case of ***The Kerala State Coastal Zone Management Authority (KSCZMA) vs Maradu Municipality famously known as Maradu Apartments Demolition Case,*** is a landmark case in which a division bench of the Supreme Court comprising of Justice Arun Mishra and Justice Naveen Sinha has ordered the demolition of five apartments which were waterfront complexes in Maradu Municipality in Kerala for the violations of CRZ rules.

Maradu is an area which lies just 7 Km from Kochi. A gram panchayat for the area was formed in 1953 for its administration but was later converted into a municipality in 2010.

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[10] Clause 3(2)(iv) of the Coastal Regulation Zone Notification, 1991.

[11] Clause 2(xii) of the Coastal Regulation Zone Notification, 1991.

[12] CRZ-II defined 'Developed area' as that area within the municipal limits or in other legally designated urban areas which is substantially built up and has been provided with drainage and approach roads and other infrastructural facilities such as water supply and sewerage mains.

In 2006 the panchayat issued building permits to four companies namely Alpha Ventures Private Limited, Holy Faith Builders and Developers, Jain Housing and Construction and K.V. Jose for the construction of five apartment Complexes. The permit was issued without obtaining the mandatory permission from the Kerala State Coastal Zone Management Authority (KSCZMA) which has the power to deal with environmental issues related to the CRZ. KSCZMA found that the construction was taking place in critically vulnerable areas which come under CRZ -III. In CRZ III area no construction is allowed within 200 meters from the coast while in CRZ II zones the limitation in 50 meters. At that time the location was classified as CRZ III. Thus, following a directive from the KSCZMA the gram panchayat issued showcase notice to the builders which alleged that they have violated the CRZ Rules as KSCZMA permission is mandatory for any civic body to grant construction permits in areas under the CRZ III category.

In response, the builders approached the High Court praying for an interim stay on the order and allowing them the construction. The petition was allowed by the Single Judge Bench of the High Court on the ground that Maradu is well developed in nature and it will come under CRZ II though mistakenly classified as CRZ III. KSCZMA approached the Supreme Court for the alleged violation of the CRZ Rules.

The Apex Court appointed a technical committee to find whether Maradu comes under CRZ II or CRZ III. Based on the finding of the technical committee that Maradu comes under CRZ III, the Supreme Court found that the permission granted by the panchayat was illegal and void and no such development activity could have taken place. In view of this finding the Supreme Court ordered the demolition of the of the Apartments.

On the amount of compensation, a bench of the Supreme Court comprising of Justice Arun Mishra and Justice S Ravindra Bhat via an order dated 27th September 2019 directed the State Government to pay a compensation of Rs. 25, 00,000/- (Rupees Twenty-Five Lakhs) to each of the flat owners who are being evicted in the case within four weeks. This amount will be recoverable from the Builder/Promoter/ the persons/officials responsible for raising the construction. However, a dispute arose as to the reasonableness of the amount as the amount was paid to the builders many years before and in this time the value of the apartments has enhanced. Thus, in another order dated 22 November 2019, the Supreme Court ordered the respective builders to deposit a sum of Rs. 61.50 Crores, which is required to be disbursed. In this order the Supreme Court also clarified that this order shall not come in the way of the flat owners in filing appropriate proceedings (civil or criminal) for redressal of their grievances in accordance with law.

Though the Law operates on the principle of prospective effect which means that generally any amendment or change made in a law is not applicable on the things done and act committed in the past. It is worth pointing out that the order of demolition of the Apartments was based on the finding by the Supreme Court that the construction was done in violation of the CRZ Rules 1991 and 1996 KCZMA Plan under which the area was classified as CRZ III and not CRZ II. However, under the 2011 notification the area was classified as CRZ II. This would mean that after the demolition the buildings can be constructed at the same location without any violation of the CRZ Rules. Thus, one could say that, this renders the demolition an exercise based on technicality[13].

[13] See Saving Maradu Apartments: A Simple Solution, available at https://timesofindia.indiatimes.com/city/kochi/kodiyeri-welcomes-natesans-backing-of-ldf-candidate/articleshow/71119117.cms (Last visited on March 30, 2020).

In another decision of the Bombay High Court in the matter of ***Goa Foundation vs Goa State Coastal Zone Management Authority***[14], wherein the issue relates to criteria of identifying the High Tide Line which is a core test for demarcating CRZ. The matter relates to the construction of Goa Marriott Resort which is located near the Gaspar Dias Beach at Panaji, where the river Mandovi meets the Arabian Sea. A writ petition was filed by the Goa Foundation alleging that the Hotel breached the Coastal Regulation Zone Restrictions. It was claimed by the Authorities, while granting permission for the construction, that the hotel is within a distance of 1.5 km for the High Tide Line. However, the Commissioner's report show that the swimming pool is hardly 20 meters from the HTL and the Hotel itself is at a distance of 30 meters from the River and is coming under CRZ II. Thus, the permission granted in favor of the Hotel have violated the CRZ notification. On the other hand, the Authorities contend that the permission was granted as per the CRZ notification and there is no violation of the same. On the direction of the division bench of the High Court, they prepared two reports to show that there is not CRZ violation by the Hotel. First of these reports was rejected by the Division Bench of the High Court and the Second Report has given rise to the present petition.

The Second Report added Soil erosion as a criterion to derive the High Tide Line. Such a criterion is not used in Goa or elsewhere. It was contended that the Second Report has also resulted in an absurd situation which is that High Tide Line as per this report is now right in the water of the river and goes against the very concept of the High Tide line.

The High Court directed the authorities to draw a line parallel to the High Tide Line from the Light House (a structure nearby) and to determine whether any construction of the Hotel falls towards the river side of this line and to take necessary actions against the Hotel in case of violation.

The Court stated that the case concerned primarily on the facet of the infringement of the CRZ Notification which is to be tested within the parameters of the CRZ and it is the primary task of the Authorities which they have to perform within the ambit of law.

The Court observed that it is not a genuine case of missing date where but one where the established principles in this regard have been completely ignored and an attempt is made to create an artificial situation to introduce a convoluted method to suit one particular establishment.

The Court held that "the burden is on those who seek to construct in the coastal zone to show that their actions are environmentally benign. If the data is not forthcoming, the sequitur is that the project proponent has failed to discharge the burden. Therefore, in the facts of the present case, the absence of date, if any, cannot ensure to the benefit of the Hotel, but the position is against it."

Expressing both the Court's lack of expertise in identifying the High Tide Line and its distrust with the Respondents – Authorities, the Court entrusted the task of identifying the High Tide Line and the parallel line to the National Centre For Sustainable Coastal Management (NCSCM) Chennai which is an authority under the Ministry of Environment and Forests and is established for the purpose of better protection, conservation, rehabilitation, management, and policy design of the Coasts. The Court set aside the

[14] Goa Foundation vs Goa State Coastal Zone Management Authority, PIL(WP) No.26/2017, decided on 24.08.2018 Bombay High Court.

impugned decision of the GSCZMA and set aside its second Report and directed it to approach NCSM for the task of identifying the Tide lines.

To conclude the Notification suffered from several loopholes as it failed to take into account the biological diversity, demographic patterns and distribution of natural resources. This caused confusions and ambiguity amongst communities living in these areas who are basically involved in fishing and other related activities. Moreover, there was no clear procedure for obtaining the CRZ clearance, monitoring post granting the clearance and other essential measures to check pollution in and around the CRZ. Therefore, after several amendments to the Notification of 1991, it was considered necessary to consolidate and issue a new notification which came into force in the year 2011.

2. COASTAL REGULATION ZONE NOTIFICATION OF 2011

Notification of 2011 enshrined three main objectives which laid focus on the protection of livelihood of traditional fisherfolk communities, preservation of coastal ecology and promotion of economic activity. Special provisions were made for several areas like Sunderban Mangroves, Chilka, Gulf of Kutch, Kundapur and Karwar among other places. It laid down the mandate for establishing the Coastal Zone Management Authority[15] in the State Government and Union Territories, with specific powers and functions. The Notification of 1991 did not initially lay down the establishment of CZMA however, an amendment was brought in to establish CZMA in respective states. For the purpose of better implementation of the Notification of 2011, National Coastal Zone Management Authority (NCZMA) and State Coastal Zone Management Authority (SCZMA).[16] Composition, tenure and mandate of NCZMA and SCZMA have already been notified by Ministry of Environment Forests. Constitution of the District Level Committee under the Chairmanship of District Magistrate has been envisaged with three representatives of local traditional coastal communities including from fisherfolk[17]. For the protection of fisherfolks, tribals and communities living around the coastal areas, the Notification of 1991 did not provide for a mechanism to obtain formal approval and regularisation of dwelling units and the same have been provided under the present notification with the certain specific conditions.

Projects which are listed under the Notification of 2011 will also attract the Environment Impact Assessment Notification, 2006. The Notification of 2011 clearly laid down the procedure for obtaining clearance for permissible activities in separate forms. Further, it was consolidated and covered under the Notification of 2011. CZMP has to be prepared by the CZMA of State Government or Union Territories. Preparation of the CZMP has to be with the fullest participation of the local communities.

Classification of CRZ has been reviewed and changes have been introduced[18]. Under the CRZ-I, areas that are ecologically sensitive and geomorphological features which maintain the integrity of the coast have been considered. Apart from those already included in the Notification of 1991, Habitats of various marine species have been included in the Notification of 2011, including the Turtle nesting grounds, Horse shoe crab habitats, Sea grass beds, nesting grounds of birds, salt marshes[19] etc. CRZ-II and CRZ-III and CRZ-IV have been retained without much changes. Whereas, the areas requiring special consideration

[15] Clause 4(b) of the Coastal Regulation Zone Notification 2011.
[16] Clause 6(a) of the Coastal Regulation Zone Notification, 2011.
[17] Clause 6(c) of the Coastal Regulation Zone Notification, 2011.
[18] Clause 7. Classification of CRZ, Coastal Regulation Zone Notification, 2011.
[19] Clause 7(f) to (j) of the Coastal Regulation Zone Notification, 2011.

for purpose of protecting the critical environmental difficulties faced by local communities which includes areas falling within Municipal limits of Greater Mumbai, Kerala including backwaters and backwater islands, and CRZ Goa[20]. Special areas like the Critically Vulnerable Coastal Areas (CVCA) such as Sunderbans of West Bengal and other ecologically sensitive areas as identified by EPA.

Another important aspect about areas requiring special consideration for CRZ areas falling with the Municipal limits of Greater Mumbai, Kerala, Goa and other areas have been incorporated. Areas falling within limits of Greater Mumbai and facing environmental issues like pollution, degradation mangroves, waste disposal, and issues like construction of roads and solid waste sites have to be identified. Furthermore, Slum Rehabilitation Scheme in the specified areas have been introduced and the State Government has the duty to implement slum redevelopment schemes through other parastatal agencies. Provisions for fishing and related activities have been given a special emphasis for the state of Kerala[21]. Areas classified under CRZ-I have No Development Zone which are habitats for turtles, and other species as covered under the Wild Protection Act, 1972.

Notification of 2011 has been able to address various issues specific to different areas which are ecologically sensitive. The idea was to protect the ecologically fragile areas thereby tightening the norms under the present notification. In order to review the Notification of 2011, a Six-member Committee was constituted under the Chairmanship of Dr. Shailesh Nayak[22], Secretary, MoES to examine the issues of coastal States/UTs relating to CRZ Notification 2011 and to examine the errors and inconsistencies and procedural simplification.

3. DR. SHAILESH NAYAK COMMITTEE REPORT

During the preparation of the Report, meetings with the State Governments and considering the implications of the Notification of 2011, the Committee has recommended after examining the issues of coastal environment, hardship faced by the communities, the need for economic development recommended the following –

a. Concrete proposal must be formulated by the Ministry, as loss of fragile ecosystem causes irreparable damage to ecosystem impacting the local communities. Naturally created barriers like mangroves, coral reefs, sea grass protect from cyclones.
b. Promotion of Eco-tourism based on the model of International Union for Conservation of Nature.
c. Ecologically Sensitive Areas under CRZ-I should be identified on scientific assessment and to draw up measures to protect and conserve.
d. Ministry of Culture to undertake identification of historical, archaeological and heritage value structures and areas for protection and conservation.
e. Protection and regulation of activities detrimental to integrity of water bodies and their beds.
f. Address the issue of disposal of sewage, effluents and solid waste.
g. Regulations in CRZ-II & III have impacted the State Town and Country Planning laws and the States should address those issues. Issues of overlapping also found

[20] Clause 7(V) of the Coastal Regulation Zone Notification, 2011.
[21] Clause
[22] Report of the Committee to Review the issues relating to the Coastal Regulation Zone Notification, 2011. http://www.indiaenvironmentportal.org.in/files/file/Shailesh%20Nayak%20Committee.pdf (Last accessed on 29th March, 2020).

as Notification overrides Town and Country Planning Regulations of the States or Union Territories.

h. Housing with basic infrastructure to be provided to the communities living in the coastal areas.
i. Existence of ambiguity and difficulty in interpretation of the Notification of 2011 including demarcation of HTL/LTL, boundaries of CRZ-I, II, III and IV.
j. Economic and social development has to happen of coastal communities.
k. Shoreline changes have been acknowledged and to identify the reasons for shoreline change.
l. New initiatives to be explored by the Ministry to protect and conserve the coastal ecosystem.

Based on these recommendations, a Draft Notification was submitted to the Government. Subsequently a new notification has been issued by the Central Government in suppression of the earlier notification of 2011 after considering the recommendations and objections received from public, notified the Coastal Regulation Zone, 2019 on 18th January, 2019.

4. COASTAL REGULATION ZONE NOTIFICATION, 2019

The Notification of 2019 has been brought out pursuant to the recommendations of the Committee and laid special focus on creating employment opportunities for the people in the coastal areas. Apart from the conservation and protection of coastal environment, the Notification also leads to enhanced activities in the coastal regions thereby promoting economic growth resulting in employment generation and better standard of living. Salient features of the Notification of 2019 are as follows –

a. As per the Notification, CRZs have been classified and changes to the existing classification has been brought into. CRZ-I has been further classified as CRZ-I A[23], which are environmentally most critical. Intertidal zone i.e., area between LTL and HTL has been classified as CRZ-I B. Whereas CRZ-II has remained without any classifications, CRZ-III has been classified into two separate categories under CRZ-III (Rural) have been classified as CRZ-IIIA and CRZ-IIIB. Densely populated rural areas are now granted more opportunities for development by reducing the No Development Zone from earlier 200 meters to 50 meters of HTL, which has been prescribed based on the population density of 2161 per square kilometre. CRZ IV is classified as Water area and further classified as CRZ-IV A i.e., area between LTL up to twelve nautical miles on the seaward side and CRZ-IV B water area and the bed area between LTL at the bank of the tidal influenced water body to the LTL on the opposite side of the bank, extending from the mouth of the water body at the sea up to the influence of tide.
b. Clearance procedures for projects or activities located in CRZ-I and CRZ-IV to be dealt with by the Ministry of Environment, Forests & Climate Change. Whereas, powers for clearance under CRZ-II and CRZ-III have been delegated to State level with necessary guidance.
c. Special importance has been granted to all the Ecologically Sensitive Areas.
d. Boost for the tourism industry as temporary tourism facilities like shacks, toilets, change rooms, drinking water facilities have been permitted in the No Development Zone of CRZ-III areas with a minimum distance of 10m from the HTL.

[23] Clause 2.1 of the Coastal Regulation Zone Notification, 2019.

e. As per the 1991 Development Control Regulation, Floor Area Ratio had been frozen. As of now it stands de-freezed and Floor Space Index is permitted for construction projects which implies a boost for the real estate sector.
f. Coastal areas treatment facilities have been permitted under CRZ-I B to abate pollution.

The recently notified Regulations has laid more emphasis on the development of coastal areas. The Notification has tried to address several issues regarding the land use. Creation of infrastructure for the development of coastal area has been the focus of the Notification. While provision for the conservation efforts specifically mentioned, opening the coastal areas may threaten the fragile ecosystem for unabated commercial activities jeopardising the ecosystem itself and ultimately leading to its destruction.

5 Things About Environment Law Compliance For Business In India No One Told You About

By **Aditya Shrivastava** - April 9, 2018

image courtesy - blog.ipleaders.in

In this article Aditya Shrivastava, Content Marketing Manager at iPleaders, *talks about the five Environment Law Compliance For Business In India which you just cannot ignore.*

India is touted as one of the fastest growing economies of the world. As per a report by LiveMint, India could regain its position of the fastest growing economy in the world in 2018. However, in the scripting of its growth, there are certain ink spots which cannot be ignored. While the Indian manufacturing sector has been given the necessary impetus time and again and the National Manufacturing Policy is trying it's best to reach its objective of increasing the sectoral contribution to the GDP by 25%, the government is also giving more initiatives to foster the ease of doing business in India a significant push.

Initiatives like Make in India, Startup-India-Standup-India, E-Biz Project, Skill Development programmes and other reforms in various sectors are few such examples of the government trying to push in reformative agendas. However, due to this "development,"

India is slowly running behind in the sector of environment protection. In fact, while the 2013 amendment to the Companies Act went ahead in carefully bringing Corporate Social Responsibility (CSR) into the regulatory ambit, little or no efforts were put in to accelerate environment protection.

WHILE THE CAPITALISTS ARGUE THAT THE PRE-EXISTING ENVIRONMENT LAWS ARE SUFFICIENT, THE TRUTH REMAINS THE SAME. IN SPITE OF TRIBUNALS LIKE NATIONAL GREEN TRIBUNAL BEING FUNCTIONAL, THE CORPORATES ARE NON-COMPLIANT WITH ENVIRONMENTAL PERMITS.

The liability might initially seem to be petite, however, there are numerous examples of cases where companies have suffered massively because of non-compliance to such laws. For example, in the *Sterlites Industries case (2013)*, a penalty of 10% of Profit Before Depreciation, Interest, and Taxes (PBDIT) was imposed on one of the largest copper smelter plants in India for operating without a valid environmental consent permit. The penalty imposed was that of INR 1 Billion.

It is important to note that after the enactment of National Green Tribunal Act, 2010 which seeks to align all other environmental laws to itself, the penalties have been significantly increased. For example, under the Section 26(1) of the Act, the tribunal can award a punishment of 3 years or a fine up to INR 10 Crore for non-compliance with the order of the NGT.

For a business to be absolutely functional and work without any hassle, it is quintessential that it is operated in strict adherence to all the legal compliances. Right from the registration of the company, everyday transactions, labor and employment practices, following safety measures and, last but not the least, environment regulations need to be consciously adhered to. If I start writing about each one of them I will have to prepare a separate course for it. Thankfully this course covers it all and manages to save me from the burden.

Here is a crisp overview of certain aspects of the environmental law that most of the people don’t know about and bear the consequences later:

Regulations And Legislations

There is an enormous list of legislation that you need to look at in order to ensure that you don’t miss out any compliance. I will keep the necessary compliance checklist for the next

article. Here is a comprehensive list of legislation you need to abide by:

1. Water (Prevention and Control of Pollution) Act, 1974 (Water Act)
2. Air (Prevention and Control of Pollution) Act, 1981 (Air Act).
3. Environment (Protection) Act, 1986 (EP Act) – This is the umbrella act which entails the following rules:
   a) E-Waste (Management) Rules, 2016;
   b) Bio-Medical Waste Management Rules, 2016;
   c) Construction and Demolition Waste Management Rules, 2016;
   d) Hazardous and Other Waste (Management and
   e) Transboundary Movement) Rules, 2016;
   f) Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989;
   g) Coastal Regulation Zone Notification, 2011; h) Environment Impact Assessment Notification, 2006; and
   i) Plastic Waste Management Rules, 2016).
4. Wild Life (Protection) Act, 1972
5. Forest (Conservation) Act, 1980
6. Public Liability Insurance Act, 1991
8. Biological Diversity Act, 2002
9. National Green Tribunal Act, 2010

It is a very tedious job to go through each and every legislation and figure out the necessary compliances. To avoid it you can take this course to ensure that you don't only have a comprehensive list of environment law compliances but are also aware of other important compliances which are required for the business.

Environmental Permits (Single or Separate)

Beginning March 5th 2016, the Ministry of Environment, Forests, and Climate Change has adopted a new method of classifying each type of industry. A concept of "white industries" has been introduced for classifying "non-polluting" companies. They do not need a permit or consent and just require to notify the relevant State Pollution Control Board.

For all the others (red, orange and green industries), there are certain environmental permits that are required to be obtained. You might require multiple numbers of permits depending on what kind of activity your business is delving into and the size of the business. Your company will be given a Pollution Index (PI) score, depending on the utilization of the resources, the air emissions, water effluents, and hazardous waste generated. You will be required to obtain consents and permits from the apt board. As per this article, the PI score is allocated in the following manner:

- *Red category: PI score of 60 and above. Including but not restricted to asbestos, nuclear power plants, shipbreaking, oil and gas extraction, etc.*
- *Orange category: PI score of 41 to 59. For example, food processing, printing ink manufacturing, paint blending, and pharmaceutical formulations.*

- *Green category: PI score of 21 to 40. 63 sectors have been identified under it. For example sawmills, tyres/rube retreating, polythene and plastic products.*

- *White category: PI score up to 20. For example solar power generation through solar photovoltaic cells, wind power, and mini hydro-electric power less than 25 megawatts.*

Environmental Integrated Permits

In India, there exists an integrated permit system where a single permission suffices for a lot of consents and permits. For example, a combined consent application to the relevant State Pollution Control Board can be submitted to obtain the 'consent to establish' and subsequently the 'consent to operate' under the Water Act, Air Act and Hazardous and Other Waste Rules, 2016.

Technology has made the process easy. For instance, the recently adopted E-Waste (Management) Rules, 2016 has introduced only one centralized and pan India application form by the Central Pollution Control Board instead of the State Board in order to get an authorization for the producers.

How Long Does A Permit Last For?

Generally, it is the State Pollution Control Board which has the discretion to determine the duration of consents and permits. In the past decade, efforts have been made to streamline the validity of each industry. Typically, an initial 'consent to establish' has a validity for a year which needs to be renewed, but it is dependable on the scale of the project. Other consents and validities such as 'consent to operate' under various air and water laws can vary from 3 to 5 years.

In case of renewal is required, an application is generally granted 60 to 120 days before the date of expiry of the 'consent to operate'. In case there has been any non-compliance, the State Board can also cancel the renewal or only grant consent in case the non-compliance has been rectified.

The latest laws have a provision for longer permits. For example, the E-Waste Rules or Hazardous and Other Waste Rules, 2016 provide a validity up to 5 years. Again, it is extremely dependant on which industry you are operating in.

Restriction On The Transfer Of Permits

If you are is trying to restructure an organization or selling your business to someone else or perhaps acquire a business, this information might be useful for you. Most of the consent orders, licenses, and environmental clearances can be readily transferred if they are obtained under the Environmental Impact Assessment (EIA). Here is the standard procedure for it:

- The new acquirer/transferee/buyer needs to submit an application to the relevant regulatory authority with an undertaking that he would comply with all the pre-existing conditions in the consent order/license grant/permit.
- The owner needs to provide a no objection certificate to the relevant regulatory authority.
- A list of supporting documents (explaining the underlying reason for the transfer, change of name, change of management, and so on), as applicable, must be presented.

Needless to say, businesses, big or small, have an equal liability to protect and safeguard the environment. In this case, their liability increases perhaps a little more because their actions are of greater magnitude and have far-reaching consequences. This is exactly why they are more than obligated to ensure that these compliances are adhered to.

There is no denying the fact that such regulations and compliances can be cumbersome and tedious and it might not be possible for everyone to keep a track of them. An easy way to do that is by subscribing to an online course which can provide you with ready checklists and guide you to run your business without any hiccup.

The task might be a rigmarole but it can be easy.

All the luck.

REFORMING THE LIABILITY REGIME FOR AIR POLLUTION IN INDIA

- ***Shibani Ghosh****

ABSTRACT

The recent uproar about the toxic levels of pollution in the country's national capital region has once again brought to fore the failure of the regulatory and legal mechanisms in India to control air pollution. According to a World Health Organisation study released in 2014, 13 of the top 20 cities world-wide with the worst quality of air are Indian cities.[1] For decades now the worsening quality of air across the country has been a cause for serious concern; yet the Central and State governments have not been able to contain it. In fact in many ways, governments have not only condoned instances of aggravated pollution, but have also actively permitted pollution to rapidly increase by granting approvals to polluting industries, not taking measures to effectively control vehicular and industrial pollution, and by practically ignoring significant sources of pollution like building construction and diesel generators.

Legislative acknowledgement of the problem of air pollution, and the need to tackle it, came more than three decades ago when the Air (Prevention and Control of Pollution) Act 1981 ['the Air Act'] was passed by the Parliament. But this early acknowledgment of the problem, and regulatory mechanisms set up consequently, have not been able to restrict the sharp upward trajectory of air provisions – encapsulating both criminal liability under the Air Act, the Indian Penal Code ['IPC'] and the Code of Criminal Procedure ['CrPC'] as well as civil liability under the National Green Tribunal Act 2010 ['the NGT Act'] and the Code of Civil Procedure ['CPC']. It does not, however, discuss the rights-based jurisprudence that has evolved from judgments of the Supreme Court and the High Courts (arising primarily under their writ jurisdiction) recognising a right to pollution free air.[2] A writ remedy is a constitutional remedy and available notwithstanding statutory limitations. It is however a

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[1] World Health Organisation, *Ambient (outdoor) air pollution in cities database 2014*, available at http://www.who.int/phe/health_topics/outdoorair/databases/cities/en/ (last visited 16 June 2015).

[2] *See* Subhash Kumar v. State of Bihar (1991) 1 SCC 420; followed in M.C. Mehta v. Union of India (*Aravalli Mining case*) (2004) 12 SCC 118.

discretionary remedy, and courts are generally reluctant to entertain cases if alternative efficacious remedies are available under other statutory provisions.

The essay is divided into three parts. The first part discusses the relevant provisions of the law pertaining to liability for causing air pollution. The second part identifies three critical issues that have emerged in the current liability regime. The third and final part proposes a way forward.

I. THE LEGAL REGIME

As the Preamble to the Air Act states, the law was passed to implement the decisions taken at the UN Conference on the Human Environment 1972[1] in which India participated.[2] During the Conference it was decided, *inter alia*, that countries would take appropriate measures to preserve the natural environment, including the quality of air, and control of air pollution.[3] The Air Act delineates various functions of the Central Pollution Control Board ['CPCB'][4] and the State Pollution Control Boards ['SPCBs'].[5] These functions include advising the Central and State Governments (respectively) on matters concerning prevention, control or abatement of air pollution, planning and executing programs for prevention, control or abatement of air pollution, and laying down standards for quality of air.

It is important to mention here that standards for vehicular emissions are proposed and decided by inter-governmental committees (with participation of industry groups) headed by the Joint Secretary, Ministry of Road Transport and Highways ['MoRTH'].[6] As the MoRTH is responsible for the implementation of the Motor Vehicles Act 1989 under which these standards are issued and enforced, the CPCB and SPCBs along with the Ministry of Environment, Forests and Climate Change have only a minor role to play with regard to regulation of vehicular emissions.

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[1] Declaration of the United Nations Conference on the Human Environment, 5-16 June 1972, UN Doc. A/Conf.48/14/rev1.
[2] Air (Prevention and Control of Pollution) Act 1981 ['the Air Act'], preamble.
[3] *Id.*
[4] The Air Act, s. 16.
[5] The Air Act, s. 17.
[6] See, Gaurav Bansal and Anup Bandivadekar, OVERVIEW OF INDIA'S VEHICLE EMISSIONS CONTROL PROGRAM: PAST SUCCESSES AND FUTURE PROSPECTS 35 (International Council on Clean Transportation 2013).

According to Section 21 of the Air Act, an industrial plant[7] cannot be setup without the prior consent of the SPCB to establish or operate such a plant. These consents are referred to as Consent to Establish ['CTE'] and Consent to Operate ['CTO']. Similar consents are required under the Water (Prevention and Control of Pollution) Act 1984 ['the Water Act'].[8] An industrial plant has to obtain a CTE before construction work/ establishing the industrial plant. Once the plant is established along with the pollution control systems as required in the CTE, it may apply for a CTO before commencing operation.[9] The State Government has the power to prescribe the application process, including the application fees and the particulars required.[10] While considering an application for consent, the SPCB can undertake such inquiry as it deems fit, and follow the procedure prescribed by the State Government.[11]

The SPCB is required to decide on an application within four months, and issue an order in writing with reasons.[12] It may refuse to grant the consent, or grant it with conditions (including specifications for equipment particularly pollution control equipment).[13] Consents are granted for a limited time period and after the expiry of such time period, the same has to be renewed. The SPCB may cancel a consent before the time period expires or refuse to renew the consent if it is found that the conditions laid down in the consent have not been complied with.[14] The SPCB may also revise the conditions in a consent in case there is technological improvement or otherwise.[15] However, in such situations the person concerned has to be given a reasonable opportunity to be heard before the SPCB decides.[16]

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[7] See, The Air Act, s. 2(k). See, Delhi Pollution Control Committee v. Splendor Landbase Limited, LPA 895/2010, Judgment of the High Court of Delhi dated 23 January 2012. The High Court considered the definition of an 'industrial plant'. It held that 'the inevitable conclusion has to be that prior consent under the Air Act would be needed where a building is proposed to be constructed wherefrom trade would be carried on and since from a shopping mall and from a commercial shopping complex trade is carried on, we hold that prior consent under the Air Act would be required'.

[8] The Water (Prevention and Control of Pollution) Act 1984 ['the Water Act'], s. 25.

[9] See, Himachal Pradesh State Pollution Control Board, Office Procedure Manual, 6-7, available at http://hppcb.nic.in/OfficeManual.pdf (last visited: 16 June 2015).

[10] The Air Act, s. 54(2)(l).

[11] The Air Act, s. 54(2)(m).

[12] The Air Act, s. 21(4). Interestingly, the consent granting provision under the Water Act includes a deeming provision that the Air Act does not have. Section 25(7) of the Water Act, states that a consent will be deemed to be given after the expiration of four months in case the SPCB has not decided the consent application.

[13] *Id.*

[14] The Air Act, s. 21(4), first proviso.

[15] The Air Act, s. 21(6).

[16] The Air Act, s. 21(4), first proviso and s. 21(6).

Any person aggrieved by an order issued by the SPCB can challenge the same before an Appellate Authority constituted by the State Government.[17] In accordance with a 1999 order of the Supreme Court, Appellate Authorities have to be headed by a High Court judge (sitting or retired), and a group of scientists of high ranking and experience to help in the adjudication of disputes relating to environment and pollution. [18] 'Person aggrieved' has been interpreted to include not only persons who may have applied for the consent, and who want to challenge the rejection of the consent application or the conditions included in the consent, as the case maybe, but also persons who would be affected by the industrial plant being granted consent, such as, persons likely to be affected by the emissions from the industrial plant.[19] Matters that are appealable before an Appellate Authority constituted under this Act cannot be filed before any civil court.[20] A decision or order of the Appellate Authority may be appealed against before the National Green Tribunal.[21]

The Air Act supports a command-and-control form of regulation with criminal sanctions. Section 22 of the Act prohibits industries from emitting any air pollutant in excess of standards laid down by the SPCB in exercise of its powers under Section 17(1)(g). SPCB can approach a court (not lower than Metropolitan Magistrate or a Judicial Magistrate of the first class) for restraining any person who is likely to cause air pollution.[22] The Act also empowers the SPCBs to obtain information about emissions from industrial plants, enter and inspect premises, take samples of emissions and send for analysis.[23]

In case emissions in excess of the permissible standards have occurred or are likely to occur due to an unforeseen incident, the person in charge of the premises has been placed under an obligation to inform the SPCB immediately.[24] Any remedial measures undertaken

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[17] The Air Act, s. 31.

[18] A.P. Pollution Control Board v. Prof. MV Nayudu (1999) 2 SCC 718, para 48; see also, Puducherry Environment Protection Association v The Union of India, WP No. 19496/2013, Judgment of the High Court of Madras dated 11 April 2014.

[19] See Gujarat Pollution Control Board v. Parmar Devusinh Shersinh, Special Civil Application No. 11/1989, Judgment of the High Court of Gujarat dated 5 May 2000, in the context of analogous appeals under the Water Act. See also, Vimal Bhai & Others v. Ministry of Environment and Forests & Others, Appeal No. 5/2011, Order of the National Green Tribunal dated 14 December 2011.

[20] The Air Act, s. 46.

[21] The National Green Tribunal Act ['the NGT Act'], s. 16(f).

[22] The Air Act, s. 22A(1).

[23] The Air Act, ss. 24, 25 and 26.

[24] The Air Act, s. 23.

by the SPCB or any other agency to mitigate the impact of such emission of air pollutants is recoverable from the person concerned.[25]

This provision implicitly recognises and implements the polluter pays principle; a principle that finds statutory expression much later in the National Green Tribunal Act 2010.[26] The provision also enshrines the absolute liability principle that was formally introduced to Indian environmental jurisprudence by the Supreme Court of India in its landmark judgment in 1987 in the *Oleum Gas leak* case.[27]

Through an amendment in 1987, the CPCB and the SPCBs were granted additional powers to issue certain directions to ensure compliance with the provisions of the Act.[28] These include directions for closure, prohibition or regulation of any industry, operation or process; or stoppage or regulation of supply of electricity, water or any other service.[29] Persons to whom such directions are issued are bound to comply with them.[30] An appeal against such directions of the CPCB or SPCB lies before the Appellate Authority,[31] and an appeal against an order of the Appellate Authority lies before the National Green Tribunal.[32]

If any person fails to comply with Section 21 or Section 22 or directions issued under Section 31A, a penalty is imposable under Section 37 of the Air Act. Failure to comply would include situations wherein a plant is established or commences operation without the

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[25] The Air Act, s. 23(3).

[26] For a comprehensive exposition on the polluter pays principle, see Lovleen Bhullar, 'Making the Polluter Pay in India: Scope and Limitations of Environmental Law', in Shibani Ghosh (ed.), ANALYTICAL LEXICON OF PRINCIPLES AND RULES OF INDIAN ENVIRONMENTAL LAW (2015) (publication in process, manuscript available on request).

[27] M.C. Mehta v. Union of India (Oleum Gas leak case) (1987) 1 SCC 395. The Supreme Court in this case held (para 31): "... an enterprise which is engaged in a hazardous or inherently dangerous industry which poses a potential threat to the health and safety of the persons working in the factory and residing in the surrounding areas owes an absolute and non-delegable duty to the community to ensure that no harm results to anyone on account of hazardous or inherently dangerous nature of the activity which it has undertaken. The enterprise must be held to be under an obligation to provide that the hazardous or inherently dangerous activity in which it is engaged must be conducted with the highest standards of safety and if any harm results on account of such activity, the enterprise must be absolutely liable to compensate for such harm and it should be no answer to the enterprise to say that it had taken all reasonable care and that the harm occurred without any negligence on its part."

[28] The Air Act, s. 31A.

[29] *Id*, explanation. While discussing the ambit of closure directions, the High Court of Delhi in Gopi Nath Pvt. Ltd. v. Department of Environment Govt. of N.C.T. of Delhi (1998) 72 DLT 536 held: "Closing down all industrial activity is neither the purpose nor the object of the Act. Prevention of pollution is. If one particular component is the cause of pollution, the Board may well, subject to the provisions of the Act, direct its closure but it cannot seal the entire unit bringing thereby even unoffending activities to a standstill."

[30] The Air Act, s. 31A.

[31] The Air Act, s. 31. Although the provision does not specifically refer to directions issued under s. 31A, it is presumed that 'order' in s. 31 covers such directions.

[32] The NGT Act, s. 16(f).

necessary consent, or it violates the conditions stipulated in the consent letter by, for instance, exceeding the permissible emission standards or not installing the requisite pollution control equipment. Such failure is punishable by an imprisonment of not less than one and half years which may extend up to six years along with a fine.[33]

In case such failure continues, an additional fine may be imposed which may extend to five thousand rupees for every day during which such failure continues after the conviction for the first such failure. If the failure continues beyond a period of one year after the date of conviction, the offender shall be punishable with imprisonment for a term of not less than two years, but which could extend up to seven years with fine.[34]

Penalties for other offences such as providing false information to obtain consent from a SPCB; obstructing a person authorized by a Board from exercising his functions; damaging any work or property belonging to a Board, etc. are provided under Section 38. The penalty for such offences is an imprisonment for term that may extend up to three months or a fine up to an amount of ten thousand rupees or both. Contravention of any provision of the Act for which a penalty is not provided specifically under Section 37 or 38 is punishable with a term of imprisonment which may extend upto three months or with fine or both.[35] In case such contravention continues, an additional fine may be imposed.[36]

The penalties mentioned in the Act have to be imposed by a court of law and cannot be levied by the SPCBs directly. The concerned SPCB or an officer authorised by it has to initiate the criminal prosecution by filing a complaint against the alleged offence in a court not inferior to that of a Metropolitan Magistrate or a Judicial Magistrate First Class. [37] Following an amendment introduced in 1987 to increase public cooperation in the implementation of the law, any person other than the SPCB can also file a complaint against

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[33] The Air Act, s. 37(1). It may be noted that the amount of fine is not specified in the Air Act. However, Section 29 of the Code of Criminal Procedure 1973 provides that a Judicial Magistrate First Class or a Metropolitan Magistrate can impose fines up to ten thousand rupees.

[34] The Air Act, s. 37(2).

[35] The Air Act, s. 39.

[36] *Id.*

[37] The Air Act, s. 43(1). See P. Pramila v. State of Karnataka, 2015 SCC OnLine SC 348. In this case the complaint was filed by the Regional Officer under s. 37 of the Air Act. The Supreme Court set aside the complaint as it was not filed by the competent authority under the Act. The Court held: "The "officer authorised in this behalf" was not authorised by the provisions of Section 43 of the Air Act, or by any other provision thereof, to further delegate, the authority to file complaints. The Chairman of the Board, therefore, had no authority to delegate the power to file complaints, to any other authority, for taking cognizance of offences under the Air Act."

an alleged offence, but such person has to give a notice of not less than sixty days to the SPCB of his or her intention to approach the court.[38] In such cases, the SPCB is required by law to provide all relevant reports in its possession to the complainant.[39]

Other than the provisions of the Air Act, instances of air pollution can also be prosecuted under the IPC, and action may be taken under the CrPC.[40] Section 268 of the IPC defines the offence of public nuisance,[41] and actions causing air pollution could potentially be brought within the definitional ambit of Section 268.[42] Section 278 makes the act of voluntarily vitiating the atmosphere and making it noxious to the health of persons, an offence punishable with a fine.[43] The Kerala High Court in a 1999 judgment found that smoking in public places was an offence under Section 278, IPC.[44] Offences under Section 268 and 279, IPC are both non-cognizable and bailable offences. With a fine of a paltry amount of five hundred rupees, and the likelihood of a long trial period, prosecution under these provisions are unlikely to effectively deter polluters.

Action can be taken against persons under Section 133 of the CrPC for undertaking certain activities which are injurious to the 'health or physical comfort of the community'. Industries or process that are emitting air pollutants and causing adverse health impacts and discomfort to the people living nearby can also be issued a notice by the Magistrate under this provision to stop such polluting activities. The Supreme Court in *Kachrulal Bhagirath Agrawa v. State of Maharashtral*[45] upheld an order under Section 133 stopping the storing

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[38] The Air Act, 43(1)(b).
[39] The Air Act, 43(2).
[40] See generally, P. Leelakrishnan, ENVIRONMENTAL LAW IN INDIA, ch. 2 (Lexis Nexis, 3rd ed 2008, Reprint 2013).
[41] **268. Public nuisance:** A person is guilty of a public nuisance who does any act or is guilty of an illegal omission which causes any common injury, danger or annoyance to the public or to the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger or annoyance to persons who may have occasion to use any public right.
A common nuisance is not excused on the ground that it causes some convenience or advantage.
Sections 290 and 291 of the IPC stipulate the punishment for the offence of public nuisance.
[42] A case law search on the manupatra database for cases raising air pollution issues and relying on Section 268 IPC did not provide much information.
[43] **278. Making atmosphere noxious to health**.—Whoever voluntarily vitiates the atmosphere in any place so as to make it noxious to the health of persons in general dwelling or carrying on business in the neighbourhood or passing along a public way, shall be punished with fine which may extend to five hundred rupees.
[44] K. Ramakrishnan v. State of Kerela, AIR 1999 Ker 385. The Court held: "There can be no doubt that smoking in a public place will vitiate the atmosphere so as to make it noxious to the health of persons who happened to be there. Therefore, smoking in a public place is an offence punishable under Section 278, IPC."
[45] (2005) 9 SCC 36.

and transportation of dry chillies from a godown as it was a public nuisance causing pollution and physical discomfort to persons residing nearby. The Court held:

> *"The guns of Section 133 go into action wherever there is public nuisance. The public power of the Magistrate under the Code is a public duty to the members of the public who are victims of the nuisance, and so he shall exercise it when the jurisdictional facts are present. ... The conduct of the trade must be injurious in presenti to the health or physical comfort of the community. There must, at any rate, be an imminent danger to the health or the physical comfort of the community in the locality in which the trade or occupation is conducted."*[46]

While criminal liability for air pollution is covered by the Air Act, the IPC and the CrPC, the National Green Tribunal Act provides for civil liability for acts causing air pollution (besides providing the statutory appellate mechanism against orders of the SPCB as discussed above). The National Green Tribunal ('Tribunal') has original jurisdiction over all civil cases raising a substantial question relating to environment, including enforcement of any legal right relating to the environment.[47]

Such question must arise from the implementation of seven laws listed in the Schedule to the NGT Act including the Air Act.[48] Substantial question relating to environment includes instances where there is a direct violation of a statutory provision that impacts or is likely to impact the community at large (not just an individual or a group of individuals); that the gravity of damage to the environment is substantial or that the damage to public health is broadly measurable; or the applicant could show that the environmental consequences are being caused by a specific activity or a point source of pollution.[49]

The Tribunal can order relief and compensation to victims of pollution, and order restitution of property damaged and environment of the area.[50] Compensation can be paid under heads mentioned in the Schedule II to the NGT Act that includes death, disability,

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[46] *Id*, para 11.
[47] The NGT Act, s. 14(1).
[48] *Id*, and the NGT Act, schedule I.
[49] The NGT Act, s. 2(1)(m).
[50] The NGT Act, s. 15.

injury or sickness, loss of wages, medical expenses etc.[51] The Act makes the person responsible for causing the damage to the environment (for example, owner of a polluting factory) liable for paying the compensation as determined by the Tribunal.[52]

In case of an accident, the Tribunal has to apply the no fault liability principle[53] – following the absolute liability principle laid down by the Supreme Court in the Oleum Gas leak case.[54] The Act also requires the Tribunal to apply the polluter pays principle (along with the sustainable development principle and the precautionary principle) while deciding cases.[55]

Other than the power to determine compensation, the Tribunal can issue interim orders including granting interim injunction or stay, and orders requiring any person to cease and desist from committing or causing any harm to the environment.[56] The Tribunal can execute its order as a decree of a civil court, and for this purpose it has all the powers of a civil court.[57] An order of the Tribunal may be challenged before the Supreme Court.[58]

The Tribunal has used it powers to issue a variety of orders to tackle the issue of air pollution. In a matter concerning environmental damage, particularly air pollution, in the Rohtang Pass region of Himachal Pradesh, the Tribunal has issued several orders including restricting the number of vehicles going to the Pass per day, directing the payment of a fee for environmental compensation by each vehicle, and differentiating between petrol and diesel vehicles (the latter being more harmful), directing the government to avoid traffic congestion, etc.[59]

While responding to rising air pollution in the National Capital Region ('NCR'), the Tribunal has directed that diesel vehicles older than ten years and petrol vehicles older than fifteen years will not be registered in the NCR.[60] The Tribunal has also issued detailed orders

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[51] The NGT Act, schedule II.
[52] The NGT Act, s.17.
[53] The NGT Act, s. 17(3).
[54] See *supra* n 27.
[55] The NGT Act, s. 20.
[56] The NGT Act, s. 19(3).
[57] The NGT Act, s. 25.
[58] The NGT Act, s. 22.
[59] See Court on its own Motion v. State of Himachal Pradesh, Application No. 237 (THC)/2015, before the National Green Tribunal, Principal Bench. See in particular Orders dated 6 February 2014 and 5 May 2015.
[60] See Vardhaman Kaushik v. Union of India, Original Application No. 21/2014, Order dated 7 April 2015 of the National Green Tribunal, Principal Bench.

to reduce pollution caused from construction activities in the NCR.[61] The Civil Procedure Code (CPC) also provides remedy for public nuisance, and therefore is a potential legal remedy against air pollution. As in any other civil suits, a declaration, injunction or any other appropriate remedy may be sought. Interestingly, in such cases persons filing the suit need not prove that special damage has been caused to them.

II. ISSUES

The state of air quality in most cities and towns of India indicates that the present liability regime is not designed or implemented to suitably punish those responsible for air pollution or deter future violations. The current regulatory model has evidently failed to achieve the objectives of the Act. For regulation of air pollution under the Air Act to be even moderately successful, several conditions have to be met. First, there has to be a credible threat of enforcement and sanctions have to be proportionate to the damage done and prohibitively expensive. Second, data collection and monitoring capacity of the regulatory agency has to be very strong, and it should be able to revise standards and technical protocols regularly to respond to evolving environmental conditions. Third, information asymmetries have to be minimised across the board. Fourth, transparency and accountability provisions have to be strong enough to disincentivise corruption and other malpractices.

There are various underlying causes for why the aforementioned conditions are either poorly met or not met at all in India – legal, institutional, political, financial, bureaucratic, and cultural – and each of these require in depth analysis. For the purposes of the present essay, focussing particularly on the liability regime for air pollution, there are at least three critical issues that are affecting the effectiveness of the existing enforcement mechanism:

II.I. Pollution Control Boards cannot levy penalties

Under the Air Act although the SPCBs and the CPCB are the key government agencies required by law to check rising air pollution, they are not empowered to levy any penalty on offending units, as the power to impose penalties lies with the criminal courts. The Boards can direct the closure of an offending unit or cut off/ regulate its water or power supply.

[61] See *Id*, Order dated 4 December 2014 of the National Green Tribunal, Principal Bench.

Closure of units may check the immediate cause of pollution, but it could lead to other problems such as unemployment, (negative) impacts on the market of particular products, wastage of resources (e.g. raw materials purchased by the unit), economic losses incurred by various actors along with the unit owner etc. In such cases, the directions may not be proportionate to the extent of violation. Closure directions would also not restitute the damage already caused to the environment or compensate the suffering caused to people affected by the air pollution. Furthermore, these directions would require inter-agency coordination to be brought into effect. Therefore, such directions do not offer an adequate or effective response to air pollution.

The language of Section 31A is open ended ('any directions'), but it has been interpreted to exclude any direction which could amount to a penalty, as penal powers have to be specifically provided in a statute. The High Court of Delhi has found that the grant of a consent cannot be made conditional on the payment of a penalty or fine or furnishing a bank guarantee, and the Boards cannot direct payment of environmental damages, as this would amount to levying a penalty.[62] Therefore, besides issuing show cause notices (which need not stop the polluting operations of a unit), or sending closure notices (which may be a disproportionate response), the Boards have little enforcement heft.

II.II. Criminal prosecution is not an effective solution

Litigation in courts could take very long to reach any conclusion. During the pendency of the case, unless a stay order is issued by the court restraining the offending unit from continuing its operations, the unit could continue to pollute. A matter could go through several appellate/revision forums and each forum could take time to conclude proceedings. An example of such protracted litigation was highlighted in *Uttar Pradesh Pollution Control Board v Mohan Meakins Ltd.*,[63] where the Supreme Court finally decided a matter relating to the pollution of a river seventeen years after the prosecution was launched by the SPCB. The time taken to conclude legal proceedings does not augur well for effective and timely pollution abatement. Along with the length of time taken to conclude legal proceedings, a low conviction rate in such cases, also lowers the deterrent impact of criminal prosecution.

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[62] See Splendor Landbase Ltd. v Delhi Pollution Control Committee (2010) 173 DLT 52, upheld in Delhi Pollution Control Committee, *supra* n 7.

[63] AIR 2000 SC 1456.

Problems in pursuing legal proceedings are further aggravated by the fact that the Boards have limited capacity to pursue such cases diligently. Studies have shown that SPCBs are under-resourced,[64] and given the range of regulatory tasks they are expected to undertake (and not just under the Air Act), they have to inevitably prioritise the use of available resources. Consent granting functions take up a significant part of the SPCBs' time and resources, leaving much less for monitoring and enforcement functions. With an enormous workload, crippling staff crunch, and not much political will, pursuing convictions in court may not be considered worth the Boards' time and resources.

II.III. The NGT Act does not provide complete relief

While the Boards now have the option of approaching the National Green Tribunal[65] under Section 15 of the NGT Act as an aggrieved person[66] for restitution of damage to the environment and for claiming compensation, it only addresses a part of the problem. The Tribunal's jurisdiction over air pollution though wide, is restricted to civil adjudication. The Tribunal cannot determine criminal liability and cannot impose a punishment of imprisonment or criminal fine. In cases of aggravated pollution, repeated violation of standards, and/or sustained inaction in the face of clear evidence of adverse environmental impacts, civil liability may not be a sufficient response. Criminal conviction resulting in jail time and reputational damage may – in some cases – be a necessary legal outcome to suitably punish the offender and at the same time prevent polluting activities in future.

Limited jurisdiction apart, judicial recourse is not a viable long-term mechanism for protecting the quality of the country's air (or any other environmental issue for that matter). Controlling air pollution requires, *inter alia*, appropriate policies on regulating sources of pollution such as transportation, construction and industries; putting in place proper monitoring and enforcement mechanisms; and extensive inter-agency cooperation. These functions are mostly outside the jurisdictional mandate of the Indian judiciary including the National Green Tribunal. No doubt in India, the judiciary has played a very active role in

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[64] Centre for Science and Environment, TURNAROUND: REFORM AGENDA FOR INDIA'S ENVIRONMENTAL REGULATORS (New Delhi: Centre for Science and Environment, 2009), http://www.cseindia.org/sites/default/files/report.pdf (last visited: 17 June 2015); Geetanjoy Sahu, ENVIRONMENTAL REGULATORY AUTHORITIES IN INDIA: AN ASSESSMENT OF STATE POLLUTION CONTROL BOARDS (Mumbai, Centre for Science, Technology & Society, School of Habitat Studies, Tata Institute of Social Sciences, 2013, available on file with author).

[65] The NGT Act, ss. 14 and 15.

[66] The NGT Act, s. 2(1)(j)(viii) – person includes every artificial juridical person, not falling within any of the other sub-clauses.

environmental governance – but mainly because the executive remains indifferent to blatant transgressions of the law.

The judiciary does not have the time and capacity to formulate environmental policies that adequately address local, regional and global environmental problems, and then effectively monitor their implementation. The Tribunal may be better placed than the regular courts to determine environmental conflicts and to monitor implementation of its orders, but its orders remain problematic when they venture into policy making. Such orders not only raise questions about enforceability and effectiveness of judicial orders[67] but also about judicial decision making processes.[68]

If one of the primary objectives of the law is to punish offenders and deter future ones, it is certainly not being achieved by the current legal regime. It is perhaps time to reconsider the nature of liability being imposed and the enforcement action envisaged in the law.

III. CONCLUSION AND THE WAY FORWARD

The current liability regime is not capable of tackling the scale of air pollution that the country is witnessing, and is likely to experience in the near future. There is evidently need to introduce reform. An opportunity to explore potential reform measures arose when the Government of India set up a High level Committee in August 2014 to review the implementation of six environmental laws including the Air Act and suggest amendments.[69]

Unfortunately, besides certain observations on the need to check vehicular emissions,[70] the Committee's report does not consider other issues pertaining to the implementation of the Air Act. It finds merit in bringing the Air Act (and the Water Act)

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[67] See, Dinesh Mohan, *Dealing with pollution in our cities*, BUSINESS STANDARD, 4 April 2015, http://www.business-standard.com/article/opinion/dinesh-mohan-dealing-with-pollution-in-our-cities-115040400713_1.html (last visited: 17 June 2015).

[68] In the matter relating to air pollution in the Rohtang Pass region, the taxi operators union that was directly affected by the order of the National Green Tribunal, approached the Supreme Court, *inter alia* claiming that it was not heard by the Tribunal before the order was passed. The Supreme Court vide its order dated 26 May 2015 in Him Aanchal Taxi Operators Union v. State of Himachal Pradesh CA No. 4864/2015 directed the Union and other appellants to place before the Tribunal facts and issues which it had not considered before passing the impugned order.

[69] REPORT OF THE HIGH LEVEL COMMITTEE TO REVIEW VARIOUS ACTS ADMINISTERED BY THE MINISTRY OF ENVIRONMENT, FORESTS & CLIMATE CHANGE (2014), http://www.moef.nic.in/sites/default/files/press-releases/Final_Report_of_HLC.pdf (last visited: 3 June 2015).

[70] *Id.* at 91.

within the ambit of an amended Environment (Protection) Act 1986[71] – but there is little deliberation on what ails the current regulatory regime, and what merging of laws would resolve. However, the Committee made a very pertinent finding in its report that resonates with the discussion above:

> *"All the Acts under review of this Committee fail the litmus test. Either penal provisions are lacking, or not sufficient, or not proportionate; or the criminal justice system is not appropriately aligned. The Committee notes the tardy implementation of even the current penal provisions, which is by itself a catastrophe".*[72]

Air quality governance in India has to improve radically in many ways. But reforming regulatory mechanisms is not a modest ask. It is particularly complicated if it is a three decades old law in question, that requires several agencies – at the Centre and state-level – to function effectively in coordination and independently, and affects a vast multitude of stakeholders. As the government considers tougher penalties to check environmental violations,[73] along with measures to deal with specific sources of pollution,[74] it is perhaps worthwhile to consider a more broad-based reform agenda that enhances the enforcement capabilities of the SPCBs, as they are the first line of regulatory defence in the law.

A situation where citizens of the country consider a judicial forum such as the National Green Tribunal to be the first port of call is unfortunate, and undesirable. A competent and accountable regulatory agency (and therefore, presumably, less susceptible to corrupt practices) with access to adequate resources (technical, human and financial) is far better equipped to formulate and enforce environmental standards than the judiciary.

It is proposed that the law be amended to empower the SPCBs with a regulatory tool box containing a mix of policy instruments at their disposal. Currently the SPCBs have the power to issue show cause notices to defaulting units, and if dissatisfied with the response, follow them with closure notices or directions regulating power and water supply. The

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[71] *Id.* at 12.
[72] *Id.* at 9.
[73] Amitabh Sinha and Liz Mathew, *Tougher pollution laws soon, vows Environment Minister Prakash Javadekar*, THE INDIAN EXPRESS, 5 May 2015, http://indianexpress.com/article/india/politics/tougher-pollution-laws-soon-vows-environment-minister-prakash-javadekar/99/ (last visited: 21 June 2015).
[74] Vidya Venkat, *Three months for fixing Delhi's pollution*, THE HINDU, 14 April 2015, http://www.thehindu.com/news/cities/Delhi/environment-ministry-announces-measures-to-address-delhis-air-pollution/article7102033.ece (last visited: 21 June 2015).

SPCBs may also revoke consent or refuse to renew consent. However, they cannot impose fines or damages that are commensurate with the environmental damage caused by the unit to initiate urgent and immediate remedial measures.

The existing enforcement powers need to be complemented with powers to impose administrative fines, revoke bank guarantees, and levy of environmental damages that could facilitate timely and effective deterrent action. Power to impose financial penalties for causing environmental damage is not unprecedented. The SPCBs have the power to impose financial penalties for the violation of rules relating to hazardous waste management.[75] Criminal prosecution would remain as an option; but resorted to only in a small percentage of cases – for instance, when other enforcement actions fail to produce the desired result or the environmentally harmful actions were of extremely grievous nature.

There are two reasons to support the introduction of additional enforcement powers. First, regulatory pluralism has been considered to be a superior alternative to a single strategy approach.[76] Power to impose administrative fines would give the SPCBs the necessary flexibility to customise their responses to environmentally harmful activities based on various (pre-determined) criteria. These criteria could be relevant policy goals, nature and gravity of offence, track record of defaulter, social and economic implications of alternative policy instruments, etc. To deal with the same regulated entity, the SPCB could adopt different policy instruments with escalating levels of severity depending on the entity's compliance behaviour over time.

Enforcement actions that are not as harsh as closure notices, and are quicker to implement than long drawn criminal prosecution, are likely to be imposed more often. If the probability of an enforcement action increases, regulated entities are more likely to be deterred from violating the law, thereby increasing the rate of regulatory compliance. One of the main reasons why the current criminal liability regime has failed is that the overwhelming pendency in the courts, and the procedural hurdles of proving a case beyond reasonable doubt negated any fear of penal action. Non-compliance does not come at a very high cost; and regulated entities are willing to take the (miniscule) risk. This tendency needs to be reversed.

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[75] The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2008, r. 25(2).

[76] Neil Gunningham and Darren Sinclair, *Regulatory Pluralism: Designing Policy Mixes for Environmental Protection*, 21(1) LAW AND POLICY 49 (1999).

Second, polluter pays principle is part of Indian environmental jurisprudence. The Supreme Court of India in several judgments has applied the principle to award damages.[77] Delayed and inadequate action (or no action at all) against polluting units violates this principle. The liability regime for air quality needs to reflect this cardinal principle of Indian environmental jurisprudence, and uphold the 'right to pollution free air'.

There have been some positive developments in empowering the SPCBs. The National Green Tribunal has upheld the power of the SPCBs to require the furnishing of bank guarantees as a condition in a consent and eventual revocation of such guarantees as compensation for environmental damage.[78] The Maharashtra State Pollution Control Board in its Enforcement Policy 2014 has recognised the difficulties in securing compliance, and decided to implement a bank guarantee scheme, with the Board contemplating extreme measures (approaching a court of law or issuing closure licenses) only in five percent of the cases.[79] Furthermore, the High-level Committee reviewing environmental laws has suggested the promulgation of a new law – Environmental Laws (Management) Act 2014 – that, *inter alia*, encourages gradation of fines based on severity of offence.[80]

A note of caution may be recorded at this point. Any effort to empower the SPCBs must be accompanied by efforts to strengthen the SPCBs institutionally, make them financially independent and secure, and increase transparency in their functioning. Power to impose administrative fines etc. would only increase the width of discretionary powers that they currently enjoy. Efforts would have to be made to curtail the potential for abuse of these powers by putting in place appropriate monitoring and accountability mechanisms. While the modest reforms suggested in this essay are not without their own risks and costs, it is clear that maintaining the *status quo* is no longer an option.

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[77] Indian Council for Enviro-Legal Action v. Union of India and Others *(Bicchri case)* (1996) 3 SCC 212; and Sterlite Industries (India) Ltd v. Union of India and Others (2013) 4 SCC 575.

[78] See, State Pollution Control Board, Odisha v. M/s Swastik Ispat Pvt. Ltd. & Others, Appeal No. 68/2012, Order dated 9 January 2014 of the National Green Tribunal, Principal Bench. The Tribunal distinguished the case before it from the fact situation in the Delhi Pollution Control Committee case, *supra* n 7, by stating that an amount imposed as a compensation for environmental restoration was permissible, and that imposed as a penalty was not as only courts could impose any penalty under the Air Act.

[79] Maharashtra Pollution Control Board, *Enforcement Policy*, http://mpcb.gov.in/images/pdf/Enforcement_Policy2014_legal.pdf (last visited: 21 June 2015).

[80] REPORT OF THE HIGH LEVEL COMMITTEE, *supra* n 69, at 72 (Clause 8.2).

A retrospective view of noise pollution control policy in India: status, proposed revisions and control measures

N. Garg and S. Maji*

This article provides a retrospective view of noise policies and ordinances in India. It also proposes revisions in them for noise abatement and control based on the available knowledge on noise policies and regulations followed around the world. The work focuses on the inclusion of noise limits for construction activities, household appliances apart from the revision in ambient noise standards and National Building Codes for protection against noise pollution. It is envisaged that the proposed revisions and work plan shall be instrumental in execution of noise abatement action plans for controlling noise pollution in India.

Keywords: Ambient noise standards, control measures, noise pollution, polices and ordinances.

NOISE pollution has become a serious problem for the society. In India, with expanding vehicular population traffic noise levels have increased, which can cause serious health effects. The World Health Organization (WHO) recognized noise as one of the major pollutants affecting the health of the human population[1]. The major sources of noise pollution are: road traffic, rail, aircraft noise, construction noise, noise emitted from the industrial set-ups, honking noise from vehicles, noise emitted from household appliances, loudspeakers, community processions, etc. Road traffic noise has been observed to be the major source of noise pollution in most of these studies carried out in different parts of the world[2–4]. Long-term noise monitoring studies are required not only for ascertaining the magnitude of ambient levels, but also for devising suitable control action plans. The European Environmental Noise Directive 2002/49/EC relating to the assessment and management of environmental noise establishes that the member states should create noise maps for the parts of their territory in terms of single-noise descriptors: day–evening–night level (L_{den}) and night equivalent level (L_{night}) respectively[5]. Implementing long-term and short-term noise monitoring strategies for measuring the ambient noise levels in various part of cities and planning of suitable abatement measures for reducing noise pollution in Indian cities are essential. The Central Pollution Control Board (CPCB), New Delhi, has initiated a National Ambient Noise Monitoring Network (NANMN) with an objective of collecting real-time noise monitoring data from major cities of India[6–8]. The network provides ambient noise level data which can be helpful in identification of noisy spots and adoption of suitable measures of abatement for noise pollution control. A retrospective view of the ambient noise standards and National Building Codes of India is required so as to ensure that the current standards, noise policies and legislations are suitable and effective enough to control noise pollution in India. The development of a validated road traffic noise model[9,10] integrated with a GIS interface for developing noise maps for Indian cities shall be indispensable in conducting Environmental Impact Assessment (EIA) studies especially for new projects and development of 'smart cities' concept implemented recently by the Government of India (GoI).

The objective of the present work is to study the status of policies and ordinances in the Indian scenario, and propose revisions for noise abatement and control based on the available knowledge on noise policies and regulations around the world[11]. This independent study is based on the available knowledge on noise policies and regulations followed around the world. It has nothing to do with any legal or Government body sponsoring the work, or accepting the conclusions of the present work. As such, in India, it is the prerogative of many Government agencies including CPCB, State Pollution Control Boards, Ministry of Environment and Forests (MoEF), GoI in consultation with National Committee on Noise Pollution Control to formulate and revise the ambient noise standards, ordinances and legislations. The Panel for Acoustics, Sound Insulation and Noise Control, CED 46:P20, constituted by the Bureau of Indian Standards

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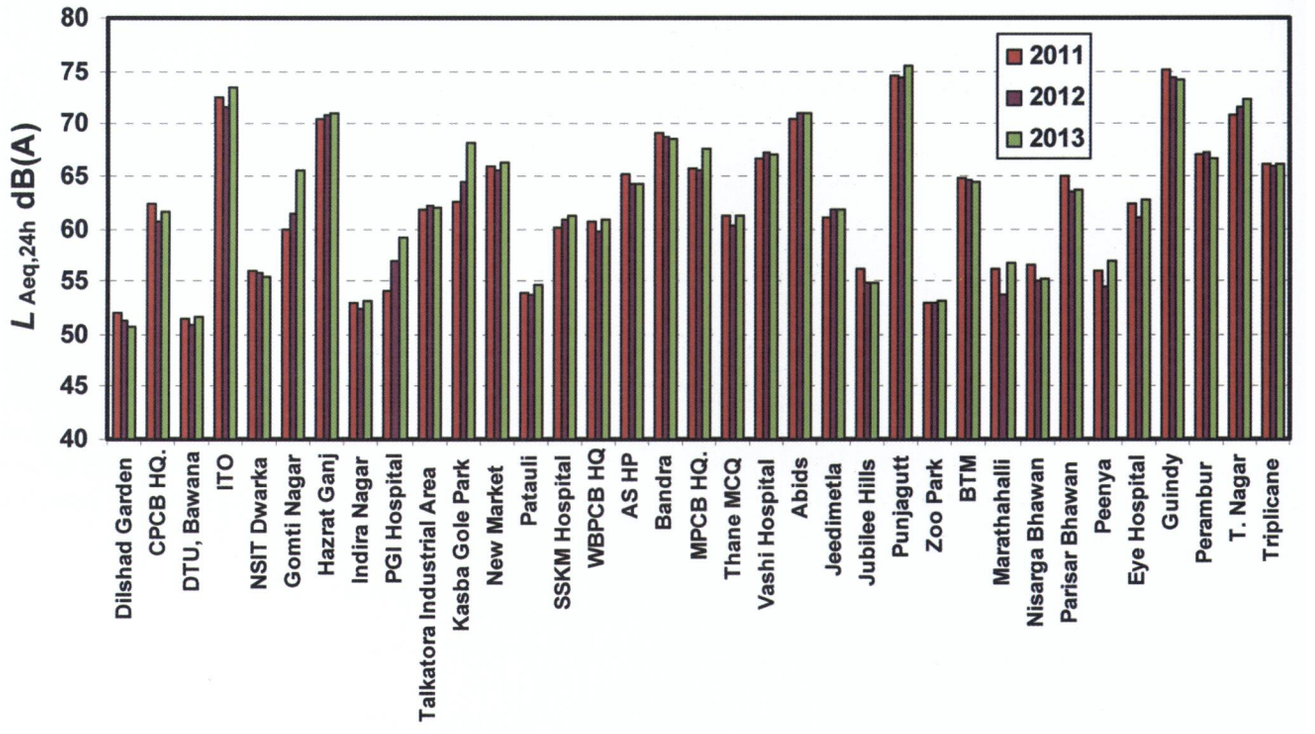

Figure 1. $L_{Aeq,24h}$ at 35 locations spread across seven major cities all over India during 2011–2013.

is responsible for amendments and revisions in National Building Codes of India[12]. Although the proposed revisions in the ambient noise standards and sound regulation requirements have been explicitly discussed earlier[13,14], the objective of the present study is to consider the overall noise pollution control policies, ordinances and measures for all types of noise sources in totality in the Indian scenario and suggesting a road map for developing a 'noise-free community' in Indian cities in the next decades.

NANMN project: status and implications

The NANMN project was established in 2011 by CPCB. Phase I of NANMN covers 35 locations in seven metro cities of India. Among these, 14 locations lie in commercial zones, 5 in industrial, 7 in residential and 9 in silence zones. The details of the project and analysis of available noise data have been discussed elaborately in the literature[8,15–17]. Figure 1 shows the equivalent continuous sound pressure level for 24 h duration, $L_{Aeq,24h}$ levels at 35 locations spread across seven major cities all over India during 2011–2013. It can be observed from the 2013 noise monitoring data that 11 out of the 35 sites (31.4%) have $L_{Aeq,24h}$ levels between 60 and 65 dB(A), while 6 sites (17.1%) have ambient noise levels more than 70 dB(A). Eleven sites have ambient noise levels less than 60 dB(A) $L_{Aeq,24h}$. $L_{Aeq,24h}$ levels varied from 50.8 to 67.1 dB(A) in 2013 for the silence zones, while for residential areas, they varied from 53.1 to 66.1 dB(A). For commercial zones, the $L_{Aeq,24h}$ levels varied from 56.7 to 75.4 dB(A), while for industrial zones, they varied from 57.0 to 74.2 dB(A). The Punjagutta commercial area had maximum $L_{Aeq,24h}$ level of 75.4 dB(A), while the Dilshad Garden had minimum $L_{Aeq,24h}$ level of 50.8 dB(A). Analysis of data also reveals that $L_{Aeq,24h}$ levels have marginally increased in three years, except for the sites Gomti Nagar, PGI Hospital and Kasba Gole Park, where an increase in ambient levels of ≥5 dB(A) is noticed. Thus, the noise monitoring data acquired from these sites are instrumental in analysing the scenario in seven cities of India and adopting suitable noise pollution control measures. The numbers of monitoring stations has increased to 70 in 2014, with each city having ten noise monitoring stations.

Proposed revisions in the ambient standards and National Building Codes

With expanding vehicular population, especially in metro cities, it is necessary to amend the ambient noise standards to reasonable values that can be easily enforced, so as to control the noise pollution levels. Table 1 shows the proposed ambient noise standards[13]. The modified adjustments to ISO 1996-1:2003 (ref. 18) recommendations

are to be added to the measured or predicted $L_{Aeq,24h}$ depending upon the type of sound source and the character of sound as explicitly mentioned in Garg *et al.*[13]. The detailed explanation and basis for selecting a cumulative noise exposure metrics such as $L_{Aeq,24h}$ and modified adjustments proposed can be found in Garg *et al.*[13]. It is proposed that for areas under silence zone, the limit is 55 dB(A); while for commercial area, and mixed residential and commercial zones, the limit is recommended as 65 dB $L_{Aeq,24h}$. The underlying objective behind adding the modified adjustments to ISO 1996-1:2003 to $L_{Aeq,24h}$ sound levels is that it will not only be able to overcome the limitations of tonality and character of sound, but also be applicable to road, rail and aircraft noise. Thus ambient standards shall be applicable for various defined areas, including those prone to aircraft noise. The proposed standards are recommended for various areas categorized under silence, residential, commercial, industrial and mixed type zones and all type of noise sources[13]. A WHO report[19] recommends that noise limits could be relatively high but rigidly enforced, or have a very low value with no legal binding whatsoever. Thus, the ambient standards proposed in the present context recommends reasonable values of ambient noise standards for various areas or zones (Table 1), so as to strictly enforce them for reducing noise pollution in the country[13].

The legal sound insulation requirements are also another important aspect for controlling noise pollution as these are vital to fight against higher ambient noise levels. In view of acoustic comfort, there has been considerable research, particularly in Europe, for better sound insulation criteria to regulate the airborne and impact sound insulation between dwellings and airborne sound insulation of facades. Also, meeting the legal requirements does not guarantee sufficient acoustic comfort. Hence several countries in Europe have adopted classification schemes for better acoustic comfort which are further higher criteria than the legal requirements intended to provide the acoustic comfort. Presently, the National Building Codes of India recommend the sound insulation criteria in terms of weighted sound reduction index (R_w) and minimum sound reduction (D_w) between rooms[12].

Table 1. Proposed ambient noise standards[13]

Area code	Category of area/zone	$L_{Aeq,24h}$ (dB(A))*
A	Industrial area	70
B	Commercial area, mixed zone	65
C	Residential area**	60
D	Silence zone**	55

*The modified adjustment factors to ISO 1996-1:2003 enlisted in Garg *et al.*[13] should be applied to the measured $L_{Aeq,24h}$ in analysis of environmental noise.

**An additional 5 dB(A) relaxation to the existing urban residential area with high population density and existing areas under silence zone may be provided by the competent authority depending upon the situation when there are only few alternatives left for application of noise abatement measures.

However, in the light of many studies conducted in Europe[20,21] and wide usage of spectrum adaptation terms (C, C_{tr}) the National Building Codes have to be amended utilizing the weighted standardized field-level difference, $D_{nT,w}$ as the descriptor used for *in situ* measurement of sound insulation. Table 2 shows the proposed criteria[14] and descriptors for building elements based on the exhaustive literature survey. Class C refers to the minimum criteria that must be followed as chosen in other countries, while Class B is defined for the acoustic comfort having an average noise level reduction of the order of 35 dB. Class A represents the high acoustic comfort levels achieved through a noise level reduction of 40 dB. The $R_w + C_{tr,50\text{-}3150} \geq 50$ dB criterion is chosen for acoustic comfort criteria, when the outdoor noise level is within 70–75 dB(A). The criterion is enhanced by 5 dB (Class A) for an outdoor noise level more than 75 dB(A). The minimum criterion of weighted sound reduction index, R_w of 50 dB is judiciously chosen for new buildings for protection against external noise. The detailed explanation and basis of choosing these values can be found in Garg *et al.*[14]. The choice between the sound insulation criterion down to 50 Hz or the common lower limit of 100 Hz may be exercised[22] depending upon the calibration and measurement capabilities (CMCs) of testing laboratories engaged in sound transmission loss testing in India[23,24]. Thus, in the Indian context, clear-cut guidelines for sound regulation requirements like those in European member states shall not only provide a harmonization of sound descriptors with those followed in other countries, but shall also be helpful in reducing the R&D costs for the building industry in India for development of suitable products or systems with desired noise level reductions[25].

The technological advancement in building sciences adapting for light-weight, dry-wall construction materials with high strength and rigidity and improved sound insulation characteristics has to be thus brought in persistent use in Indian dwellings, rather than relying on massive constructions[26–28]. It is envisaged that stricter building codes with respect to sound insulation requirements of building elements shall be implemented and strictly enforced in National Building Codes of India for new residential projects and 'smart cities' developed in the future to provide acoustic comfort to residents from the outside noise.

Noise pollution control policies and measures

The major objectives of a noise control programme should be to identify areas having high ambient noise levels in each part of the city, and evaluating the efficacy and suitability of noise abatement measures for bringing

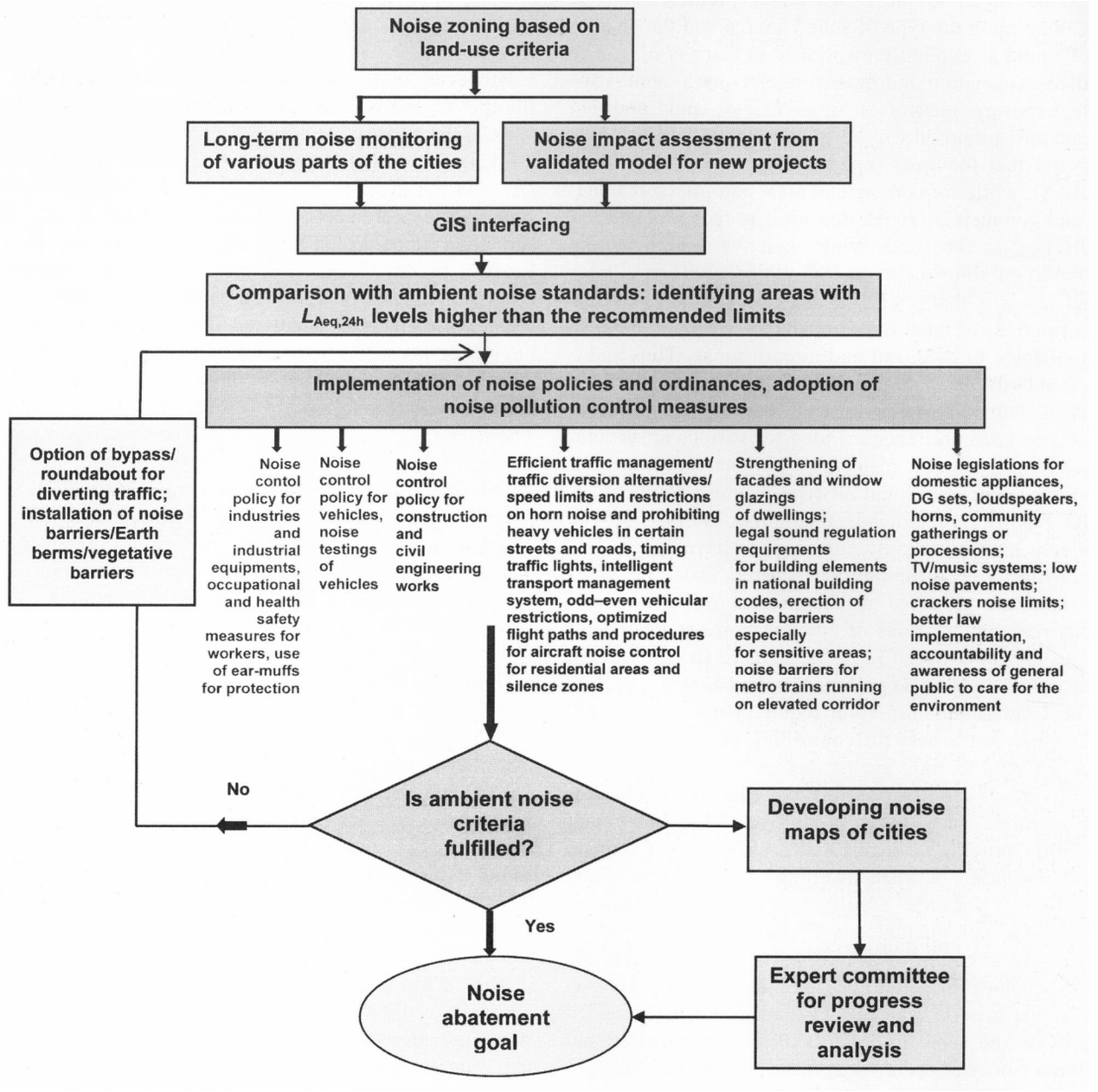

Figure 2. Flow chart of a noise pollution control strategy for reducing ambient noise levels in Indian cities.

these levels below the ambient noise standards. An appropriate noise policy suitable for controlling the noise exposure of various sources is necessary. Figure 2 shows a comprehensive and modified flow chart of a noise pollution control strategy for reducing the ambient noise levels in Indian cities, as discussed previously[13]. Noise zoning based on land-use criteria, noise monitoring and noise impact assessment using a validated model and implementation of policies and ordinances for noise control are the various aspects of the noise control programme to be emphasized. Noise mapping of the cities and ascertaining the compliance of ambient noise standards should be the major objective of such a programme. Adoption of a noise abatement goal as proposed in a Dutch study[29] shall provide a roadmap for execution of such a programme at a diversified scale. However, special fundings, support from local municipal authorities, State Pollution Control Boards, transport and development authority such as Delhi Development Authority, as well as awareness among the general are needed for the accomplishment of targets[30]. For instance, a noise abatement goal may be formulated as follows: decreasing the number of houses exposed to a noise level >75 dB(A) by 100%, >70 dB(A) by 90% and >65 dB(A) by 50% to be realized till 2030.

Table 2. Proposed criteria and descriptors for building elements[14]

Building elements	Prescriptive criteria (dB)		Verification criteria (dB)	
Facades	Class A	$R_w + C_{tr,50\text{-}3150} \geq 55$ when $L_d > 75$ dB(A)	Class A	$D_{nT,w} + C_{tr,50\text{-}3150} \geq 50$ when $L_d > 75$ dB(A)
	Class B	$R_w + C_{tr,50\text{-}3150} \geq 50$ when $70 \leq L_d \leq 75$ dB(A)	Class B	$D_{nT,w} + C_{tr,50\text{-}3150} \geq 45$ when $70 \leq L_d \leq 75$ dB(A)
	Class C	$R_w \geq 50$	Class C	$D_{nT,w} \geq 45$
	Class D	$R_w \geq 45$	Class D	$D_{nT,w} \geq 40$
Between dwellings	Class A	$R_w + C_{50\text{-}3150} \geq 60$	Class A	$D_{nT,w} + C_{50\text{-}3150} \geq 55$
	Class B	$R_w + C_{50\text{-}3150} \geq 55$	Class B	$D_{nT,w} + C_{50\text{-}3150} \geq 50$
	Class C	$R_w \geq 52$	Class C	$D_{nT,w} \geq 47$
	Class D	$R_w \geq 47$	Class D	$D_{nT,w} \geq 42$
Rooms in dwelling units		$R_w \geq 40$		$D_{nT,w} \geq 35$
Classrooms, offices, kitchen and utility rooms		$R_w \geq 45$		$D_{nT,w} \geq 40$
Windows*	Class A	$R_w + C_{tr,50\text{-}3150} \geq 35$	Class A	$D_{nT,w} + C_{tr,50\text{-}3150} \geq 30$
	Class B	$R_w + C_{tr,50\text{-}3150} \geq 30$	Class B	$D_{nT,w} + C_{tr,50\text{-}3150} \geq 25$
	Class C	$R_w \geq 30$	Class C	$D_{nT,w} \geq 25$
	Class D	$R_w \geq 25$	Class D	$D_{nT,w} \geq 20$
Doors*	Class A	$R_w + C_{tr,50\text{-}3150} \geq 30$	Class A	$D_{nT,w} + C_{tr,50\text{-}3150} \geq 25$
	Class B	$R_w + C_{tr,50\text{-}3150} \geq 25$	Class B	$D_{nT,w} + C_{tr,50\text{-}3150} \geq 20$
	Class C	$R_w \geq 25$	Class C	$D_{nT,w} \geq 20$
	Class D	$R_w \geq 20$	Class D	$D_{nT,w} \geq 15$

*If the size of windows and doors is more than 25% of the total area of the facade, the criterion for each class is further enhanced by 5 dB. Choice between the sound insulation criterion down to 50 Hz, or the common lower limit of 100 Hz may be exercised[22].

Development of noise maps, setting up of expert committee for progress review and analysis like the National Committee for Noise Pollution Control (NCNPC), and targeting a noise abatement goal shall be key steps for controlling the noise pollution levels in the country.

The legal provisions for controlling noise pollution in India are: Indian Penal Code (section 268, 290, 291); Criminal Procedure Code (section 133); Factories Act, 1948; Motor Vehicles Act, 1988; Law of Torts; Air (Prevention and Control of Pollution) Act, 1981 and Environment (Protection) Act, 1986. Under Air (Prevention and Control of Pollution) Act, 1981, noise has been included in the definition of air pollutant[31,32]. The following control measures are suggested for noise emitted by various sources.

Transportation noise control

Transportation noise due to rail, road and aircraft should be specifically dealt with respect to the ambient noise standard proposed. The noise legislations for motor vehicles at the manufacturing stage are essential for controlling transportation noise. The noise limits for vehicles recommended by CPCB as applicable at manufacturing stage from 1 April 2005 should be effectively exercised[33]. Noise regulations should also be planned for future electric and hybrid vehicles. Enforcement of the proposed ambient standards shown in Table 1 valid for all the transportation sources shall be a large step for controlling noise pollution. The 'odd–even restrictions on vehicles' as executed in January and April 2016 in Delhi city can be also a good step for controlling vehicular traffic and noise levels provided that the public transport system is capable of catering to the daily transport needs of the public. Installation of noise barriers for the metro trains running on elevated corridors shall also be helpful in controlling the noise induced due to wheel–rail interaction, especially for dwellings located in the immediate vicinity. The abatement of aircraft noise particularly for the residents living near airports is also to be considered by adopting the noise reduction at source itself, optimized flights paths and procedures such as continuous descent approach, land-use planning and operating instructions for low noise emissions from the aircrafts, especially for the residential areas and silence zones.

Motor vehicle horn noise

Horns should be used only as traffic warning devices. A maximum level, L_{max} of 100 dB(A) for noise made up of a single non-varying loudness is recommended. Experimental studies conducted at various sites in Delhi city have revealed that for areas with traffic noise having dominant horn noise component, octaves in the frequency range 2.5–4 kHz are dominant[34]. Thus, for the abatement of traffic noise with a dominant horn noise component, sound insulation in octaves of 2.5–4 kHz should be higher. However, the coincidence dip observed in sound transmission loss characteristics has to be controlled in this frequency range.

A back pane thickness of 10 mm is recommended to be used in a double glazing with an average air gap of 50 mm for controlling the coincidence dip. A 7 mm laminated glazing (PVB 0.76 mm) in front and 10 mm at the

back with an air gap of 50 mm has $R_w + C_{tr}$ value of 40 dB analytically predicted from Insul software[35], and registers a coincidence dip at 1.6 kHz (mass–air–mass resonance at 63 Hz); it is quite effective for such applications. Garg *et al.*[36] described the analytical formulations that can be readily used by manufacturers and architects to predict sound transmission loss in terms of single-number rating and selection of suitable glazing[34,37,38] for achieving the desired noise-level reductions and reducing the honking noise.

Fire-cracker noise

The manufacture, sale or use of fire-crackers generating noise levels exceeding 125 dB(AI) or 145 dB(C) pk at 4 m distance from the point of bursting shall be prohibited. For individual fire-crackers constituting a series, the above-mentioned limit may be reduced by 5 log 10(N) dB, where N is the number of crackers joined together[6]. The noise from different brands of fire-crackers is tested every year at CSIR-National Physical Laboratory, New Delhi so as to ascertain whether the noise criteria are met or not.

Loudspeaker noise and noise from community processions

The noise level at the boundary of a public place, where a loudspeaker or public address system or any other noise source is being used shall not exceed 10 dB(A) above the ambient noise standards for the area or 75 dB(A), whichever is lower[6]. The peripheral noise level of privately owned sound system shall not exceed by more than 5 dB(A) the ambient air quality standard specified for the area in which it is used, at the boundary of a private place. Night-timing restrictions should be imposed on air shows, public demonstrations, etc. In some cases, wherever appropriate, fines may also be imposed.

Industrial noise

The areas under industrial zone should follow the ambient noise standards recommended for such zones, as described in Table 1. The major noise sources in industrial units, including heavy machinery, power transformers, etc. should be enclosed, if possible, so as to reduce the exposure of workers high noise levels. Exposure to noise in an occupation environmental is recommended to be eight-hour continuous A-weighted sound pressure level, $L_{Aeq,8h}$ less than 85 dB(A). For peak noise, the limit of C-weighted peak sound pressure level, $L_{C,peak}$ of 140 dB(C) is proposed[39]. Isolating the receiver positions from noisy sources by increasing the distance between them and use of source enclosures, control rooms and screen can be helpful in the control of direct field. The reverberant field can be controlled by applying sound absorptive materials to room surfaces[40]. Apart from the implementation of occupational and health safety measures, ear muffs should be provided to workers and other staff in the industry for protecting them against long-term noise exposure.

Diesel genset noise

MoEF notifies that the sale of a product model not having valid type-approval certificate, or not complying with the noise limits as determined by the verification for Conformity of Production (COP), shall be prohibited in India. The noise limit imposed for generator sets run with kerosene or petrol is 86 dB(A) sound power level[41]. The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity up to 1000 KVA, manufactured on or after the 1 January 2005 is recommended as 75 dB(A) at 1 m from the enclosure surface[42]. Noise from the DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end. The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25 dB(A) insertion loss or for meeting the ambient noise standards, whichever is on the higher side. The DG set shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB(A). Six laboratories in India have been authorized by MoEF for carrying out type-approval and COP certification all over the country.

Construction equipment noise

Construction equipment operating in close proximity to residential areas can be of disturbance to the community. Thus, construction noise and vibration limits are essential, particularly those related to digging and piling operations for underground metro stations, etc. Table 3 shows the proposed noise limits for general construction at residential receptors[43]. The piling and digging operations not only cause vibrations which may induce cracks in building, but also produce airborne sound through building

Table 3. Proposed noise limits for commercial activities at residential receptors[43]

	General construction activities $L_{Aeq,15\ min}$ (dB(A))		
	Duration of activity		
Time period	Short term	Medium term	Long term
Daytime	65	60	55
Evening period (6–10 p.m.)	60	55	50
Late night (10 p.m–6 a.m.)	45	45	45

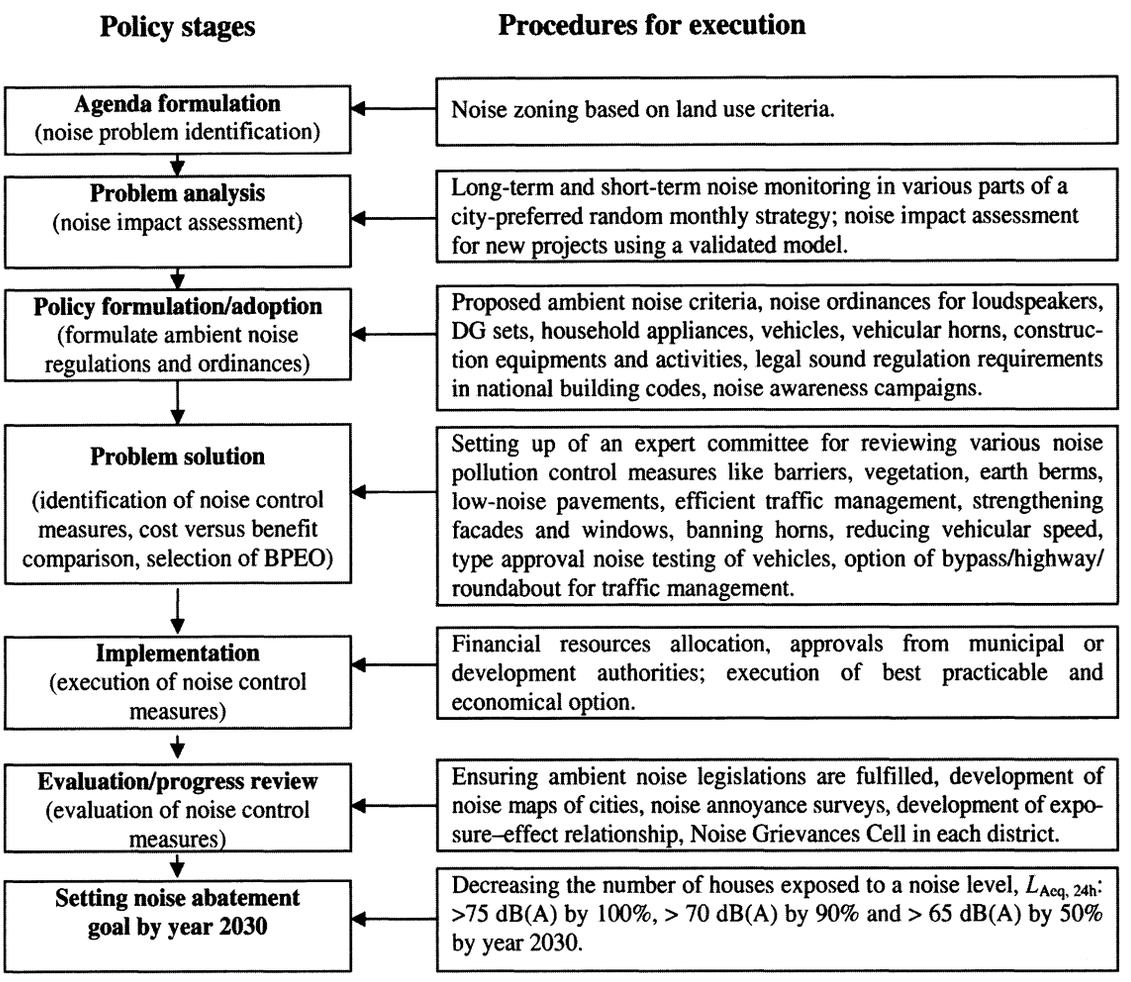

Figure 3. Proposed framework for community noise assessment and abatement in India.

Table 4. Proposed noise limits for domestic appliances and construction equipment at manufacturing stage

Domestic appliance	Maximum permitted sound power level (dB(A))
Refrigerator and freezer	55
Washing machine, spin dry	72
Microwave oven	70
Electrical fan (desk fan, stand fan, wall fan, ceiling fan)	70
Vacuum cleaner and dryer	70
Indoor heater	55
Air conditioners (split, indoor)	72
Air coolers	72
Hair dryer	75
Portable gensets (petrol or kerosene)	86
Food processor	90
Food blender	100
Lawn movers, welding generators, compressors	110
Handheld concrete breakers	120

elements, which can be of annoyance to the residents. The noise labelling of construction equipment should be made mandatory as there are sometimes practical complications involved in enforcement of standard noise limits for construction equipments especially in residential areas.

Noise from domestic appliances

Noise control in home appliances has to be economic, simple and easily implemented as there exists a global competition among manufacturers. An overall reduction of radiated noise levels of 6 and 10 dB have been reported in the domestic dryer and vacuum cleaner respectively, using the developed jute felt acoustical blanket[44]. Sound labelling of appliances shall be a helpful tool for creating awareness amongst manufacturers and customers about increasing the product quality by reducing noise emitted from the domestic appliances[45]. The noise limits should preferably be considered in terms of sound power level[46], which is constant for a given source and is independent of the acoustic environment. Sound power measurements L_{WA} are measured according to ISO 3744 (ref. 47) and ISO 3746 (ref. 48). Table 4 shows the proposed noise limits for domestic appliances and construction equipment at the manufacturing stage.

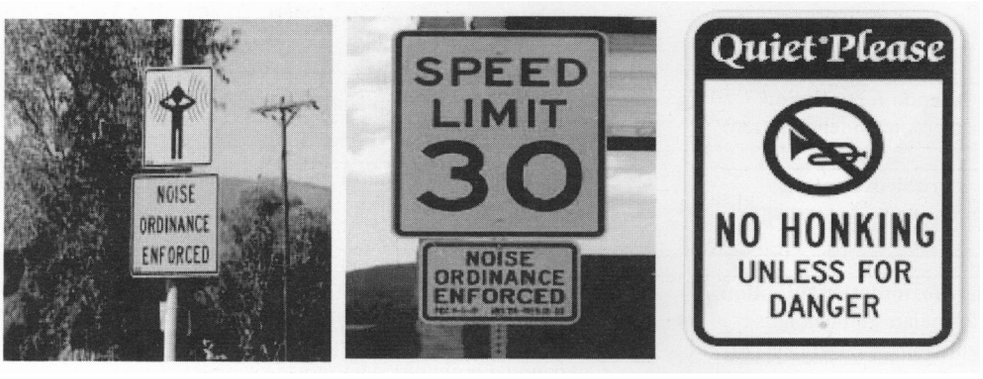

Figure 4. Illustrative noise ordinance signs for public awareness towards noise pollution control[52,53].

Thus, the noise standards for all the sources in conjunction with the enforcement of the proposed ambient noise standards and legal sound insulation requirements shall be a vital step in fighting the noise pollution in India. Figure 3 assimilates all the measures, policies and discusses a proposed framework for community noise assessment and abatement in India as suggested in some studies[49–51]. Illustrative noise ordinances sign (Figure 4), as suggested by Chanaud[52], can be an effective step for educating about the existence and enforcement of noise ordinances, especially for heavy traffic density areas[53]. Proper measures should be undertaken to avoid long-term noise exposure to school children susceptible to higher noise levels during the mass-drill events, etc. Traffic policeman should be provided with ear-muffs so as to avoid hearing loss due to their prolonged exposure to long-term traffic noise. It is envisaged that awareness among general public in maintaining a 'noise-free community' is a must. Participation of NGOs and social websites[54] in creating awareness and educating people about noise and associated health hazards apart from school and college curriculum shall be a great step in this regard. The noise grievances cell as a part of State Pollution Control Boards should be proactive in receiving, analysing and taking appropriate action on complaints. Such complaints are more particularly on festival days as reported by Mandal and Bandyopadhyay[55]. Establishment of these noise grievance cells in each district and helpline number for easy accessibility and freedom to file a complaint can be a proactive step in this regard. Educative and innovative programmes such as organizing 'Noise Awareness Campaigns', 'Dhwani Pradushan Niyantran Diwas' (noise pollution control day) and integrating 'Noise Pollution Control Mission' as a part of the ongoing 'Swatch Bharat Mission' introduced by the Government of India shall be indispensable in controlling noise pollution in India. Socio-acoustic surveys, noise impact assessment studies due to various noise sources, and noise monitoring during festival days should be conducted in parallel to quantify the noise impact and assessment of induced noise annoyance[56–60].

Conclusion and recommendations

A retrospective view of noise policies and ordinances in India and proposes revisions in them for noise abatement and control based on the available knowledge on noise policies and regulations followed in other countries is provided here. The work focused on inclusion of noise limits for construction activities, and domestic appliances apart from revision in ambient noise standards and National Building Codes for enhancing the sound insulation of building elements for protection against noise pollution. The noise limits for domestic appliances, motor vehicles and construction equipment at the manufacturing stage and enforcement of ambient noise standards shall be helpful in controlling noise pollution in India.

The implementation of noise pollution control measures essentially requires a strategic noise abatement planning with enforcement of proposed ambient standards, revision in National Building Codes, exercising control limits on all the noisy sources and formulation of noise abatement goal. The suggested flow chart for reducing the ambient noise levels and targeting a noise abatement goal shall be a vital step in this regard for environmental protection in future. Identification of noisy hot spots having higher $L_{\mathrm{Aeq,24h}}$ sound levels than the recommended limits and implementing suitable noise abatement measures shall be indispensable for noise pollution control. Provision for the erection of noise barriers, especially for sensitive areas like hospitals, schools, colleges, old-age homes, religious institutions, etc. and other areas lying in the silence zone should be made in future projects planned. Studies on socio-acoustic surveys with an objective of correlating the noise annoyance with exposure, effect of noise levels on the human body and hearing loss, on workers in industry, effect of noise exposure on traffic policeman and workers at construction sites, etc. should also be conducted in parallel for increasing awareness of society towards controlling noise pollution levels in the country. It is envisaged that the proposed standards, revision in National Building Codes and noise control measures shall be indispensable in the development

of 'smart cities' concept proposed by the Government of India.

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Water Pollution in India: An Overview of Existing Statutory Frameworks in Management of Ecosystems

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> ***There is one universal law . . . that law is justice. Justice forms the cornerstone of each nation's law.*** [2]

I. Prologue

Across the globe there are rising concerns about the economic, social, and environmental aspects of the world-water-crisis and about the structural aspects of a lack of access to basic water resources. Related issues are inequities in access to water resources, the privatization of water in the context of neo-liberal policies, and a continued resistance to the recognition of economic and social rights. The increasing scarcity of water has resulted in efforts both internationally and domestically, in particular in developing nations, to advance a human rights-based approach to access to water. [3] This approach is gaining force, with India and South Africa foremost among those nations advocating a rights-based approach.

The Supreme Court of India has been actively engaged, in many respects, in the protection of environment. While conventionally the executive and the legislature play the major role in the governance process, the Indian experience, particularly in the context of environmental issues, is that the Court has begun to play a significant role in resolving environmental disputes. Although it is not unusual for Courts in the Western democracies to play an active role in the protection of environment, the way Indian Supreme Court has been engaged since 1980s in interpreting and introducing new changes in the environmental jurisprudence is unique in itself. Besides the assigned role of interpretation and adjudication[4] of environmental law the Court has laid down new principles to protect the environment, reinterpreted environmental laws, created new institutions and structures, and conferred

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2 *Alexis de Tocqueville, 1835*

3 "*What Price for the Priceless? Implementing the Justiciability of the Right to Water*", 120 HARV. L. REV. 1067, 1068–69 (2007).

4 Speaking constitutionally, the role of the Supreme Court as proclaimed under Article 141 of the constitution of India is to 'declare' the law that shall be binding on all courts in India. As such, it does not envisage interaction, much less a direct dialogue, with the executive government of the day.

additional powers on the existing ones through a series of illuminating directions and judgments. The Court's directions on environmental issues is involved not just in general questions of law as is usually expected from the Court of the land but also in the technical details of many environmental cases. Indeed, some critics of Supreme Court describe the Court as the 'Lords of Green Bench' or 'Garbage Supervisor'.[5] International legal experts have been unequivocal in terming the Indian Courts of law as pioneer, both in terms of laying down new principles of law and also in the application of innovative methods in the environmental justice delivery system.[6]

India offers a fascinating lens through which to view the issues raised by a rights-based approach to access to water. The Constitution of India is a remarkable document with an explicit transformatory agenda, drafted at a moment when the ideals and aspirations of human rights were compelling to the newly independent nation. Recognizing the role of law and the significance of rights in remedying the sharp inequities of colonial India— with its divisions of class, caste, gender, and religion—the Constitution incorporates notions of universal human rights. Taking its postcolonial constitutional mandate for social reform through judicial activism seriously, the Indian Supreme Court has been remarkably enthusiastic about interpreting the Constitution to reach decisions in favor of the justiciability of social and economic rights. Although the right to water is not a fundamental right, the Supreme Court has over the years creatively read in the right to water through the right to life.[7] The Court has also been receptive to incorporating international law in its analysis of socioeconomic rights.

However, despite this progressive jurisprudence, the State has done little to enforce judicial decisions, or to initiate domestic legislation to bring it into conformity with India's international law obligations. Notwithstanding constitutional mandates and judicial injunctions, millions of Indians, in particular women and children do not have adequate access to water. According to the World Water Development Report of 2003, "in terms of availability of water, India is at the 133rd position among 180 countries and as regards the quality of the water available, it is 120th among 122 countries."[8] Seventeen percent of India's population does not have

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5 S.S. Prakash and P.V.N. Sarma, *'Environment Protection vis-a-vis Judicial Activism'*, 2 Supreme Court Journal 56 (1998).

6 M.R. Anderson, *"Individual Rights to Environmental Protection in India", in* A. E. Boyle and M.R. Anderson eds., *"Human Rights Approaches to Environmental Protection"*, 1 (United Kingdom: Oxford University Press, 1998).

7 *Supra Note 2, at 1080.*

8 S. Muralidhar, *"The Right to Water: An Overview of the Indian Legal Regime", in* Eibe Riedel & Peter Rothen eds, *"The Human Right To Water"*, 2006, Pg. 65, website- http://www.ielrc.org/content/a0604.pdf.

access to potable water, 80% of children suffer from waterborne diseases, and a total of 44 million people have illnesses related to poor water quality.[9]

Water is cradle of life. It is a basic human need and a finite life support system. To protect this precious resource, one needs a stringent enforcement system meant for its conservation, sanitation and supply. Environmental laws are meant to set standards for what people and institutions must to do control or prevent environmental pollution including water. After enactment it becomes the job of the central and state governments to make sure that those who are subject to these environmental protection laws knows what they must so to comply. In this case, we have designated central and state institutions called the Central and State Pollution Control Boards respectively, their primary role is the enforcement of the Environmental Protection Act (EPA) and its constituent statutory frameworks dating back to the Post Stockholm environmental laws such as the Water (Prevention and Control of Pollution) Act of 1974.

The difficulties in translating the rights articulated at the Supreme Court level to the material context of ensuring that governance structures are in place to actually enforce these rights. I acknowledge the need to recognize the specific context of group rights to water based on customary law and tradition. In fact, customary law in India supports the notion of the right to water, and there is a recognition of the broad social right to access to water.[10] Currently, the debate in India on water rights is focused on in whom the rights should be vested—individuals or the state in trust.[11] The government asserts that the right should vest in the state, whereas NGOs and academics argue for rights to be vested at various levels, rather than all lying with the state.[12] This latter position calls for a system of correlative rights vested in cooperatives together, with some rights vested in the state through the public trust doctrine.[13] Arguably, as suggested by some experts, a structure whereby individual use rights and market forces are mediated by governance structures would be a pragmatic response to the increasing scarcity of water resources.[14]

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[9] Ruchi Pant, *"From Communities' Hands To MNCS' Boots: A Case Study From India On Right To Water, Rights And Humanity"*, UK 16 (2003), website-www.righttowater.info/wp-content/uploads/india_cs.pdf.

[10] Marcus Moench, *"Allocating the Common Heritage: Debates over Water Rights and Governance Structures in India"*, Economic & Political Weekly, June 27, 1998, Pg. A-46, A-48.

[11] *Ibid, Pg. A-50.*

[12] *Ibid.*

[13] *Ibid Pg. A-48.*

[14] *Ibid, Pg. A-53.*

II. Water Pollution

II.I. What is water pollution?

Water is good solvent .Therefore it is rarely found, except in chemical laboratory, free from 'impurities'. Even rain water has dissolved some gases in it. The practical and rational definition of water can thus be following-

> *"The presence of deleterious matter in such quantities to make the water unsuitable for its designated use."*

In Scientific sense, "water pollution is a distortion of the aquatic ecosystem. Hence, water pollution is such a change which 'adversely affect the aquatic ecosystem in terms of the living organism, Oxygen content, the presence of toxins and so on.[15]

In legal sense, Strictly Speaking, pollution of water means a departure from normal state (rather than a pure water, for ideally unpolluted water is misconception) of water by human activities in such a manner to prevent it from being used for the purposes thought as normal. Normal areas of use include domestic, agricultural, Industrial, Fish, and other aquatic life and wild life including recreation and aesthetics.[16]

The water (Prevention and control of pollution) act 1974 makes a legal definition of water pollution as –

> *"Such contamination of water or such alteration of the physical, chemical, or biological properties of water or such discharge of any sewage or trade effluent or any other liquid ,gaseous or solid substance into water as may, or is likely to create a nuisance or render such water harmful or injurious to public health or safety or to domestic, commercial, industrial ,agricultural or other legitimate uses or to the life and health of animals or aquatic organism."*[17]

II.II. Types of Water Pollution

Pollutants of water come in many forms, including:

a) Deoxygenating materials, for example, sewage and other organic wastes, such as silage, farm wastes from a number of heavily polluting

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[15] Kailash Thakur, "*Environmental Protection Law and Policy in India*", Deep & Deep Publication, (2005), Pg. 26-27.

[16] *Ibid.*

[17] R.C.Das & D.K.Behra, *"Environmental Science –Principles and Practices"*, Prentice Hall of India pvt. ltd. New Delhi (2008), Pg. 20.

industrial processes (e.g. food processing and the production of smokeless fuel, textiles, paper and dairy products);

b) Nutrient enrichment by such things as fertilizers, which may give rise to eutrophication, causing an accelerated growth of plants and algae and leading to a decline in water quality.

c) Solids, which may impede flows or block out light for growth;

d) Toxic materials: some materials, such as heavy metals, pesticides or nitrate, are toxic to humans, animals, plants, or all three, often depending on the level of the dose received;

e) Materials which cause an impact on amenity, such as car tyres or shopping trolleys, or old boots in canals;

f) Disease –carrying agents, such as bacteria;

g) Heat, which may affect biological conditions and also deoxygenates water. The effect of any potential pollutant will vary according to the size, temperature, rate of flow and oxy gen content of the receiving waters, as well as the local geology and the presence of other pollutants and any resulting synergistic effects. The use made of a stream is also an enormous importance in deciding whether it can be said to be polluted, and third factor has a large impact on the attitude of the regulatory bodies towards the setting of standards and their enforcement. It is not sufficient to look only at pollution of surface waters, since 30 percent of public water supply is taken from ground waters. As a result the control of water pollution encompasses the control of liquid discharges to land.[18]

III. International Law: Transboundary Water Resources

The complexity of regulating water resources is accentuated when inland waters are divided by international boundaries. Rivers may constitute the border between two countries, traverse the frontier, or even combine the two characteristics, as with the Danube, the Rhine and the Rio Grande. Water regulation thus must adapt itself to multiple situations, resulting in a variety of regulatory schemes, both at the national and international levels, often influenced by economic and political factors.[19]

Early international cooperation concerning rivers and lakes mainly concerned utilization of the watercourses for specific purposes, such as navigation or irrigation, or management of certain risks such as flood. At

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[18] Stuart Bell & Donald McGillivray, *"Environmental Law"*, Oxford University Press, (2004), pp.552-553

[19] France, Tribunal administratif de Strasbourg, July 27, 1983, *La province de la Hollande septentrionale v. Etat français,* R.J.E., 1983/4, 343.

first, particular water pollution problems were addressed when harmful activities originated in neighboring countries, applying general precedents and norms of transfrontier pollution. Later, the development of international environmental law led to the adoption of rules and principles to govern the conduct of states in respect to the conservation and harmonious utilization of natural resources shared by two or more states.[20]

The 1997 *UN Convention on the Law of the Non-Navigational Uses of International Watercourses* – which has not entered into force -- made an important contribution in this regard by defining a watercourse as a *system of surface waters and ground waters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus.*

The Council of Europe, an intergovernmental organization of which 45 European states are members, adopted on October 17, 2001 a *European Charter on Water Resources* stating the main principles that should govern the use and management of such resources. The principles are based on existing and generally accepted norms of diverse origin: international instruments like Chapter 18 of *Agenda 21,* adopted by the 1992 Rio Conference on Environment and Development, and rules and principles included in different international conventions and agreements. The European Water Charter also reflects basic principles expressed in the legislation of different countries. It can be considered as the synthesis of norms governing the use of water resources and the rights and duties of individuals and public authorities in this field. The European Charter on Water Resources, Recommendation REC (2001) 14 of the Committee of Ministers had adopted recommendations by different international bodies.[21]

Under the Charter, freshwater resources are to be utilized in keeping with the objectives of sustainable development, with due regard for the needs of present and future generations. Water use must be equitable and reasonable in the public interest. Water policy and law must protect the aquatic ecosystems and wetlands. The Charter contemplates a universal right to a sufficient quantity of water to meet basic needs and a universal obligation to conserve water resources and use them prudently. Public and private partners must manage surface water, groundwater and related water in an integrated manner that respects the environment as a whole, takes regional planning into account, and is socially equitable and economically rational. Integrated management must aim to ensure the protection, conservation and, if necessary, rehabilitation of water resources. Under the

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[20] Dinah Shelton and Alexandre Kiss, Introduction by Hon. Judge Christopher G. Weeramantry, *"Judicial handbook on Environmental Law",* Published by United Nations Environment Programme, 2005, Pg.68-69.

[21] France, Tribunal administratif de Strasbourg, June 11, 1987, *Land de Sarre et autres v. Ministre de l'Industrie,* R.J.E., 1987/4, p.491.

Charter, any new deterioration and exhaustion of these resources must be avoided, the recycling of wastewater encouraged and, where appropriate, limitations placed on certain uses.[22]

IV. Laws under International Arena

National water law in some jurisdictions includes a right to water; in others, it contemplates a sophisticated regulatory system for water management.

IV.I. Water regulation

In most jurisdictions, water regulatory regimes are based on prevention, precaution and remediation at source as well as the "polluter pays" principle. To this end, states use regulatory instruments such as water quality objectives, discharge standards, the best available technologies and economic instruments compatible with meeting the population's basic needs. Water concessions may be granted for a limited duration and made subject to periodic review.

Underground water resources are typically the subject of special protection, and their use for human consumption is given priority. Pollution of groundwater can be caused by direct discharge, or by indirect percolation of pollutants through the ground or subsoil. Agricultural activities, including the use of fertilizers or pesticides, and dumping of garbage or other wastes containing polluting substances play an important role in this regard. Groundwater can also be polluted by accident, through breakage of pipes, leaking reservoirs or cisterns, or traffic accidents involving vehicles carrying polluting substances. Laws to protect groundwater, whose deterioration is difficult to reverse, often take into account these factors.

Laws and policies may require careful assessment and monitoring of large-scale consumption of water in agricultural or industrial processes to avoid unsustainable utilisation. At each state level central, regional and local authorities adopt and implement water management plans often based on the catchment basin. Decisions on water also take into account the particular conditions at regional or local level. Specific watercourses or lakes can be protected by prohibiting construction or works in their proximity or submitting such activities to prior authorization. Rivers and lakes situated in zones of ecological protection benefit from the general protection accorded these zones.

National water law frequently uses the techniques of environmental impact assessment, licensing, and prohibitions. The German water

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[22] *Supra Note 15.*

legislation provides an example. The Federal Water Act of July 27, 1957, as amended, incorporates provisions on environmental impact assessment, requires that preventable damage be avoided and inputs of waste water kept to a minimum and stipulates that the use of water bodies requires an official permit or license. The introduction and discharge of substances into surface or groundwater constitutes a use of water. A license for wastewater discharges may only be issued if the hazardous load of the waste water is kept at the levels set forth in the Act and as low as best available technology allows. The Waste Water Charges Act of September 13, 1976, as amended, applies the polluter pays principle to increase progressively the charge rate for discharges into water. Further protection is afforded by a Drinking Water Ordinance that lays down special requirements on the quality of drinking water; it includes provisions on the nature of drinking water, the duties of the water-works operators and monitoring by health authorities. It also specifies limits on the amount of water borne harmful substances. The limit values are set so that detrimental effects on health are not to be expected after a lifelong intake. Finally an Environmental Compatibility of Washing and Cleansing Agents of March 5, 1987 provides that washing and cleansing agents shall be put into circulation only in such a form that their use will not have any detrimental effects on the quality of waters.[23]

The procedural approach adopted by the French legislation can also serve as an example. An industrial plant that produces dangerous substances and discharges polluting material into water or air must prepare an impact statement covering all the consequences of its activities on the environment, including the effects on water. The impact statement is submitted to public inquiry before a permit to construct or authorization to function is obtained. The license can be granted on conditions. Particular measures of security can be prescribed if an installation carries with it risk of major accidents. Regular monitoring must be exercised over the functioning of the plant.[24]

IV.II. Water as a public resource or a commodity

The legal status of water as a commodity privately owned by individuals varies between jurisdictions. Some states are increasingly experimenting with privatization of water management functions previously held in the public domain, with some success in attracting investment to improve water infrastructure; etc. In other states (Spain, Greece) waters above and under the ground are placed in the public domain. This means that the government retains authority to grant water–use rights subject to terms and conditions, including modification or revocation of the rights by the government under given circumstances, subject in some jurisdictions to

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[23] *Ibid Pg. 66-67.*
[24] *Ibid.*

compensation if the modification is not due to the fault of the right-holder.[25] When there existed with vested water rights, both actual and potential, the government may seek to assert its role as owner or guardian of the resource and regulate its uses on behalf of the public. While any legislature may change the rules of water use, it is widely held that any changes should not cause undue hardship to "existing" users. As is the case with all environmental regulation, retroactive application of the rules may give rise to a claim of compensation for expropriation.

Particularly relevant, in this regard, are the experience of the United Kingdom in switching from a private property system of surface and underground-water rights to an administrative permit system, and the experience of Spain in reclassifying all water resources as public domain subject to administrative grant of water rights. Spain's Water Act of 1985 protected vested rights in groundwater by offering relevant holders the option of either recording their rights with the government and preserving them free from government interference for fifty years, or not recording their rights and risking loss of them for competing users. The option was made available only for a limited transition period. The law was challenged in court by vested rights holders who claimed that they have been substantially deprived of constitutionally protected property rights. The challenge was rejected by Spain's Constitutional Court in a November 1988 judgment, which held that the special regime of vested water rights is a legitimate interference with constitutionally protected property rights, on the grounds of the subordination of rights in natural resources to the general interest enshrined in the Constitution and the reasonableness of the restrictions in light of the general interest.[26]

The transfer of water rights, i.e., their exchanging hands and use through government agency of market mechanisms, is practiced subject to considerable restrictions. The general trend is to allow some flexibility in this domain, subject to prior government approval of a transfer. Far less flexibility exists in the domain of irrigation-water rights, which tend to attach to the land they serve. The issue of water-rights mobility is particularly relevant in arid countries.

IV.III. Water resource management

The management of water resources is more and more generally recognized as a necessity. Generally, effective water management requires legislative action and the use of legal mechanisms as well the existence of

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[25] *Supra note 15, Pg. 67.*

[26] Dinah Shelton and Alexandre Kiss, Introduction by Hon. Judge Christopher G. Weeramantry, *"Judicial handbook on Environmental Law"*, Published by United Nations Environment Programme, 2005, Pg.68.

adequate administrative and judicial structures for sound short-term and long-term decision making and for ensuring compliance with such decisions.

In Spain, water-resources planning have a central role in the overall legal framework for the management of the country's water resources. The legislation provides a river-basin plan and national hydrological plan, the contents of the plans, the process of forming, approving and revising the plans and the effects of the approved plans. Water resources planning is to be coordinated with other sectorial planning exercises, most notably in the fields of agriculture, energy and land-use, and such coordination is to be effected at the level of the national hydrological plan. The participation of the general public is expressly provided. In Germany two different kinds of planning instruments, at the river basin or regional level is to guide and orient all governmental decision-making with regard to water-resources management. Co-ordination of water planning with land-use planning and regional-development objectives is mandatory. In the Netherlands, comprehensive legislation for water-resources management provides for the formation of different interrelated water-planning instruments at state, provincial and local levels, covering surface water- resources management in regard to quantity and quality. Groundwater management plans are provided for by separate legislation. In Italy a river-basin approach provides for river-basin plans, spanning conservation to development, from water allocation to water pollution control, from the control of harmful effects of water to forestry, fisheries and mining development, from coastal zone management to the control of soil contamination. River basin plans must be coordinated with other general development plans and with land-use plans, and have a binding effect. Water pollution control legislation includes mandates for specific plans.[27]

IV.IV. Access to water resources

For distribution of water, some countries adopt private rights models. Private rights models may vary depending on the jurisdiction; for example, one scheme may give precedence to the party that first exploits the water resource (first-in-time, first-in-right); others allocate water rights based on geographic location, seeking to balance between the interests of upstream and downstream riparian. Disputes between interests with competing claims to a water resource frequently lead to litigation.

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[27] *Ibid.*

V. LEGAL CHALLENGES FOR WATER POLLUTION CONTROL BOARDS (PCBs)

In India purity of water has been always emphasized from time immemorial. In the Rig-Veda, and the Yajur Veda, we find many verses in praise of lord varun (God of Water) and Lord Indra. In the Yajur Ved water was regarded as a source of life and grain. The pollution of water is tortuous act. It is covered by the tort of nuisance as it causes injury to person and property, comfort of health. In ***Pakkle v. P. Aiyasami***[28] it was declared by the madras High Court that altering the natural quality of water whereby it is rendered less fit for any purpose for which in its natural state it is capable of being used gives cause of action in nuisance. Action can also be brought against statutory authority for nuisance by Private Individual for water pollution. Legal control for water pollution was available in British India also, the first act concerning water pollution in India is the *Shore Nuisance (Bombay and Kolaba) Act of 1853.* It authorized the Collector to issue notice to party concerned requiring it to remove nuisance anywhere below high water mark or get it abated or removed himself.

In general, water law is largely state based. This is due to the constitutional scheme, which since the Government of India Act, 1935 has in principle given power to the states to legislate in this area. Thus, states have the exclusive power to regulate water supplies, irrigation and canals, drainage and embankments, water storage, hydropower and fisheries.vi Thus, with regard to water pollution, Parliament did adopt an act in 1974, **The Water Act of 1974 (Amendment, 1988).**[29] This is the first law passed in India whose objective was to ensure that the domestic and industrial pollutants are not discharged into rivers, and lakes without adequate treatment. The reason is that such a discharge renders the water unsuitable as a source of drinking water, for the purposes of irrigation and to support marine life.[30] This Act paved the way for the creation of Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs).

The main function of the CPCB 'shall be to promote cleanliness of streams and wells in different areas of the states'. The term stream includes river, watercourse, inland water, subterranean waters, and sea or tidal waters to such extent or such point a state government may specify in this behalf. The Board may perform functions such as

a) Lay down, modify or annul in consultation with the state government concerned, the standards for a stream or well;

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[28] *AIR 1969 Mad 351.*

[29] River Boards Act, 1956, website- http://www.ielrc.org/content/e5602.pdf, visited on 29.01.15.

[30] M Prasad, *"Environmental Protection: The Role of Regulatory System in India"* website-http://www.ecoinsee.org, visited on 29.01.15.

b) Plan and cause to the executed a nationwide programme for the prevention, control and abatement of water pollution;

c) collect, compile and publish technical and statistical data relating to water pollution and the measures devised for its effective prevention and control and prepare manuals, codes or guides relating to treatment and disposal of sewage and trade effluents and disseminate information connected therewith;

d) Advise the central government on any matter concerning the prevention and control of water pollution;

e) Coordinate the activities of the SPCBs and provide technical assistance and guidance to the SPCBs; and

f) Carry out and sponsor investigation and research relating to problems of water pollution and prevention, control or abatement of water pollution.[31]

In order to achieve its objective Pollution Control Boards at Central and State levels were created to establish and enforce standards for factories discharging pollutants into bodies of water. The State Boards are empowered to issue Consent for Establishment (CFE) whenever a firm wanted to establish a new factory and also issue Consent for Operation (CFO) for existing factories. They were also given the authority to close factories or, in the case of disconnecting power and water supply, issue directions to the concerned Departments for enforcement of Boards standards.[32]

Any environmental legislation is based on resources and tools for enforcement. Any pollution control authority must require instruments for such regulatory approach. These include a variety of economic incentives; fair, efficient, relevant and updated regulation with accompanying environmental standards and norms. Many polluters have disregarded the directions of pollution control boards and violating the conditions of consent with impunity. Pollution Control Boards (PCBs) have not been fully empowered to exercise coercive powers of their own; and most part of this comes from the clash of jurisdiction of powers. The core contention is the fact that PCBs face hostile legal provision for penal action against polluters.

VI. The National Legislative Framework Contributing to the Development and Realisation of the Rights for Water Pollution

In India, the Constitution does not recognize a fundamental right to water. However, the right to water has been derived from the fundamental

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[31] G. Bhaskaran, Pollution Control Acts, (1998), C. Sitaraman & Co., Chennai.
[32] Ibid.

right to life under Article 21 of the Constitution.[33] In addition, the Constitution recognizes economic, social, and cultural rights under the Directive Principles of State Policy. Although non-justiciable, they are fundamental to the formulation of public policy, governance, and the interpretation of constitutional rights.[34] Article 39 (b) provides: "The State shall, in particular, direct its policy towards securing...that the ownership and control of the material resources of the community are so distributed as best to subserve the common good.."[35] The Constitution obliges the State and all citizens to protect the environment.[36] It also emphasizes India's obligation to respect international law.[37]

The fundamental right to water has evolved in India, not through legislative action but through judicial interpretation. Indian Supreme Court decisions deem such a right to be implied in Article 21, the right to life, interpreted to include all facets of life and to also include the right to a clean environment to sustain life.[38] While upholding the Indian government's decision to construct over 3,000 dams on the river Narmada, the Supreme Court stated in ***Narmada Bachao Andolan***, that "water is the basic need for the survival of the human beings and is part of right of life and human rights as enshrined in Article 21 of the Constitution of India . . . ."[39]

Understanding the right to water as implied in the recognition of the right to a clean environment, the Supreme Court has repeatedly reaffirmed the connection between public access to natural resources, including water, the right to a healthy environment, and the right to life under Article 21 of the Constitution.[40]

The Supreme Court has been proactive in the context of the State's duty to not pollute—ordering polluters to clean up water sources and coastlines, and restitution of the soil and ground water. The Court has also applied the "precautionary principle" to prevent the potential pollution of drinking water sources during industrial development.[41] In ***M.C. Mehta v. Union of India***, which concerned the pollution of the river Ganga, the Supreme Court reaffirmed the duty of the government, under Article 21, to ensure a better quality of environment and ordered the government to

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[33] Indian Constitution art. 21 ("Protection of life and personal liberty.—No person shall be deprived of his life or personal liberty except according to procedure established by law.")

[34] *Ibid. at art. 37.*

[35] *Ibid at art. 39(b).*

[36] *Ibid at art. 51A(g).*

[37] *Ibid at art. 51(c).*

[38] *Francis Coralie Mullin v. Adm'r, Union Territory of Delhi, (1981) 2 S.C.R. 516.*

[39] *Narmada Bachao Andolan v. Union of India, A.I.R. 2000 S.C. 375.*

[40] *Hinch Lal Tiwari v. Kamala Devi, A.I.R. 2001 S.C. 3215.*

[41] *M.C. Mehta v. Union of India, (1998) 2 S.C.R. 530.*

improve its sewage system.[42] In ***A.P. Pollution Control Board v. Prof. M.V. Nayadu***, the Court held that the right to access to drinking water is fundamental to life and that the state has a duty under Article 21 to provide clean drinking water to its citizens.[43] In ***M. C. Mehta v. Union of India***, the Supreme Court of India recognized that groundwater is a public asset, and that citizens have the right to the use of air, water, and earth as protected under Article 21 of the Constitution.[44]

A landmark decision is ***Vellore Citizens' Welfare Forum v. Union of India***, which dealt with compensation to victims of water pollution caused by tanneries.[45] The Supreme Court incorporated principles of customary international law—The Polluter Pays Principle and The Precautionary Principle—as an integral part of domestic environmental law, linking them with the fundamental right to life in Indian constitutional law.[46] Emphasizing the duty of the government to prevent and control pollution, the Supreme Court held that "the Constitutional and statutory provision protect a person's right to fresh air, clean water and pollution free environment, but the source of the right is the inalienable common law right of clean environment."[47]

Significantly, the Supreme Court has recognized that water is a community resource to be held by the State in public trust in recognition of its duty to respect the principle of inter-generational equity.[48] In ***M.C. Mehta v. Kamal Nath*** the Court declared that:

Our legal system based on English common law includes the public trust doctrine as part of its jurisprudence. The State is the trustee of all natural resources which are by nature meant for public use and enjoyment. Public at large is the beneficiary of the seashore, running waters, airs, forests and ecologically fragile lands. The State as a trustee is under a legal duty to protect the natural resources. These resources meant for public use cannot be converted into private ownership.[49]

VII. CONCLUSION

Water pollution has the capabilities to disrupt life on our planet to a great extent. Government had passed laws to try to combat water pollution thus acknowledging the fact that water pollution is, indeed, a serious issue.

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[42] *M.C. Mehta v. Union of India, (1998) 2 S.C.R. 530.*
[43] *A .P. Pollution Control Bd. v. Prof. M.V. Nayudu, 2000 S.C.A.L.E. 354.*
[44] *M.C. Mehta v. Union of India, (2004) 3 S.C.R. 128.*
[45] *Vellore Citizens' Welfare Forum v. Union of India, (1996) 5 S.C.C. 647.*
[46] *Ibid.*
[47] *Ibid.*
[48] *M.C. Mehta v. Kamal Nath, (1997) 1 S.C.C. 388.*
[49] *Ibid.*

But unfortunate that, the government alone cannot solve the entire problem of this water pollution. It is ultimately up to us, to be informed, responsible and involved when it comes to the problems we face with our water. We must become familiar with our local water resources and learn about ways for disposing harmful household wastes so they don't end up in sewage treatment plants that can't handle them or landfills not designed to receive hazardous materials. In our yards, we must determine whether additional nutrients are needed before fertilizers are applied, and look for alternatives where fertilizers might run off into surface waters. We have to preserve existing trees and plant new trees and shrubs to help prevent soil erosion and promote infiltration of water into soil. Around our houses, we must keep litter, pet waste, leaves, and grass clippings out of gutters and storm drains.

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A STUDY ON CRIMINAL REMEDIES FOR ENVIRONMENTAL PROBLEMS

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ABSTRACT:

Traditionally, in India environmental problems used to be addressed through private law doctrines such as trespass, nuisance, strict liability or negligence in India or remedies available under Indian Penal Code or Criminal Procedure Code. Early statues many of which continue in force, dealt with problems on a sectoral or typological basis. For example, offences written in the Indian Penal Code penalizes certain kinds of air pollution, water pollution etc. Sanitary codes dealt with the quality of water and specific regulations were sometimes drawn up to regulate certain types of industrial establishments. Some of the statutes dealing with specific types of problems were important characteristic of period before 1980s. A new trend has been seen in Indian legal system after the Stockholm conference in 1972. The old laws were interpreted with new zeal for environment protection. The present Chapter deals with the zing of Indian Judiciary in interpretation of the provisions of Criminal Procedure Code and Indian Penal Code for the environment protection. Both these codes contain provisions for public nuisance.The right of a person to pollution free environment is a part of basic jurisprudence of the land. Article 21 of the Constitution of India guarantees a fundamental right to life and personal liberty. The Supreme Court has interpreted the right to life and personal liberty to include the right to wholesome environment.Stockholm Declaration of 1972 was perhaps the first major attempt to conserve and protect the human environment at the international level. As a consequence of this Declaration, the States were required to adopt legislative measures to protect and improve the environment.

Accordingly, Indian Parliament inserted two Articles, i.e., 48A and 51A in the Constitution of India in 1976, Article 48A of the Constitution rightly directs that the State shall endeavour to protect and IMPROVE.

Keywords: Environmental problems, IPC, CRPC, Environmental Protection,indian legal system.

Aim of the Study:

To trace the various kinds of environmental problems, bring out the law relating to environmental problem, analyse the various other remedies.

HYPOTHESIS:

The Indian Judiciary has tried to interpret provisions of sec. 133 of Crpc for speedy remedy.

RESEARCH METHODOLOGY:

This is a doctrinal research and materials collected are secondary data.

Research question: Whether the criminal remedies will lead to reduction of Environmental problems?

INTRODUCTION:

The environmental law as it is known today is an amalgamation of common law and statutory principles.Even before specific laws came into force, there were certain common law remedies against pollution. Common law is the body of customary law of England based upon judicial decisions and is embodied in the reports of decided cases. Common law had been administered by the common law courts of England since the middle ages. The term 'common law' is derived from Latin,lex communis.In common law, pollution cases generally fall under four categories. They are Nuisance, Trespass, Negligence and Strict liability. The dominant water law theories and the public trust doctrine also had influence on the use of staple resources of water and land.(Shastri, S.C., Environmental Law, Ed. 3rd , p.71)(Mathur 1996)

NUISANCE

The deepest doctrinal roots of modern environmental law are found in the common law principles of nuisance. A well known writer says that the substantive law for the protection of the citizen's environment is basically that of common law relating to nuisance.

There is much difficulty in employing tortious actions based on nuisance as an (Baxi 1980) Effective remedy against environmental pollution because of the exhaustive and diverse definitions of the term "nuisance"."Nuisance" ordinarily means anything which annoys, hurts or that which is offensive. Nuisance includes any act, omission, injury, damage, annoyance or offence to the sense of sight, smell, hearing or which is or may be dangerous to life or injurious to health or property.' The failure to distinguish between trespass and nuisance is another difficulty. The former is a direct infringement of one's right to property. In the latter, the infringement is the result of an act which is not wrongful in itself; but the consequences which may follow such act infringe the right of other persons.(www.legalservice.india.com) AIM: TO protect environment and safeguard forests and wildlife of the country.

Kinds of Nuisance

In common law, nuisance are of two types namely public and private nuisance.A public nuisance can be defined as an unreasonable interference with a right common to general public.A private nuisance is a substantial and unreasonable interference with the use and enjoyment of land.") A public nuisance has been defined in Section 268 of the Indian Penal Code also.(Ayotte and Smith 2011)

V. K. BEENA KUMARI CASE

The importance of the division of nuisance into public and private lies partly in the difference of the remedies and defences applicable to each and partly in the fact that a private individual has no right of action in respect of a public nuisance unless he can show that he has sustained some "special" damage over and above that inflicted on the community at large. In India, public nuisance action can be brought before a court either by a civil or by a criminal action. Section 91 of the Code of Civil Procedure, 1908 ensures the right of action in the case of public nuisance. The procedure for removal of a public nuisance is laid down in Sections 133 to 143 of the Code of Criminal Procedure, 1973.(Mathur 1996) In England, all civil proceedings brought in respect

of public nuisance other than a private action by an individual who or a public or local authority which, has suffered particular damage or an action brought by a local authority in its own name to protect the inhabitants of its area must be brought with the sanction and in the name of the Attorney General.'A private individual or a public authority may bring a private action on public nuisance in his or its name when and only when he or it can show that he or it has suffered some particular foreseeable and substantial damage over and above that sustained by the public at large or when the interference with the public right involves a violation of some private right of his or its own.(Mau 2006)

Environment Protection and Indian Penal Code , 1860

Though the awareness to the hazards of development came after Bhopal leak case and the need had been felt to frame special laws for Environment Protection Act, 1986 is a step towards that precaution. We cannot say that prior to that there was no law for the purpose. The different laws during British raj were enacted to deal with different problems related to environment. Some the laws are still in existence today. One of these is Indian Penal Code which was enacted in 1860 and it is also applicable today. There are many provisions against pollution in Indian Penal Code, 1860.Chapter IV of Indian Penal Code deals with offences relating to public health, safety, decency, convenience, morals under Sections 268, 269, 270, 279, 280, 287, 288, 290 291,294. Public Nuisance has been defined in section 268 as, a person is guilty of a public nuisance who does any act or is guilty of illegal omission which causes any common injury, danger or annoyance to the public or to the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger, or annoyance to persons who may have occasion to use any public right. The section further explains that a common nuisance is not excused on the ground that it causes some convenience or advantage. The public nuisance covers all types of pollutions i.e. pollution of land, water, air, noise pollution etc. Section 290 of the Indian Penal Code (I.P.C.) provides punishment for public nuisance (which includes pollution cases also) in cases not otherwise provided for. These offences are punishable with fine which may extend to 200 rupees. In K.Ramakishnan v. State of Kerala the Kerala High Court held that smoking , in any form, in public place is a public nuisance and cases can be filed under section 290 of the Penal Code as it is violative of Right to life provided under Article 21 of the Constitution. As regards water pollution, Section 277 provides that “whoever voluntarily corrupt

or fouls the water of any public spring or reservoir so as to render it less fit for the purpose for which it is ordinarily used, shall be punished with simple or rigorous imprisonment for a term extending to three months or fine of five hundred rupees or with both. Section 269 of I.P.C. also could be invoked against a water polluter. (Churchman 1733)The section provides, "whoever unlawfully or negligently does any act which is, and which he knows or has reason to believe to be, likely to spread the infection of any disease dangerous to life, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine, or with both."(Connolly 2007)

Section 278 of the Act, provides that whoever voluntarily vitiates the atmosphere in any place so as to make it noxious to health of the person in general dwelling or carrying on business in the neighbourhood or passing along a public way, shall be punished with fine which may extend to five hundred rupees. The water polluter can also be punished under section 425 of I.P.C. for mischief. If his act causes wrongful loss or damage to public or to any person or if his act causes the water pollution could be brought under section 511 of the Act. Section 440 of the Act deals with mischief caused by killing maiming animals and cattle. Section 286 of the I.P.C. provides punishment for negligent conduct with respect to explosive substance. Similarly Sections 284 and 285 provide punishments for negligent conduct with respect to poisonous substance and negligent conduct with respect to fire or combustible matter respectively. The weak side of these provisions is that the punishment provided for the above mentioned offences are too meager, looking to present day gigantic problem of environment pollution. Through revision, by way of enhancement of the fine and period of imprisonment is very essential and desirable.(Erfani 2007)
Apart from Indian Penal Code in British India numbers of legislations were passed which had a direct bearing with one or other components of environment. Some are offshoots of industrial developments. Some are for protection of forest and some for protection of animals and particularly of wildlife.(Author 1993)

The Criminal Procedure Code, 1973 and the Environment Protection

The provisions of Chapter X of the Criminal Procedure Code of 1973 provide effective, speedy and preventive remedies for public nuisances cases including insanitary conditions, air, water

and noise pollution. It contains provisions for enforcement of various provisions of the substantive law. Section 133 of the Criminal Procedure Code provides that a district magistrate or sub-divisional magistrate or any other executive magistrate specially empowered on this behalf by the State government can make a conditional order to remove such nuisance, and if the nuisance maker objects to do so, the order will be made absolute. Any order duly issued under this provision shall not be called in question in any civil court. The magistrate can act under this provision, either on receipt of a report of a police officer, or on other information, and taking such evidence that he thinks fit. Nuisance is defined in very liberal terms and includes construction of structures, disposal of substances, conduct of trade or occupation. But in case of disobedience of orders, the Court can impose penalties provided under section 188 of Indian Penal Code, 1860. It provides punishment for a maximum period of six months and a fine which may extend to one thousand rupees. Section 144 of the Criminal Procedure Code confers powers on an executive magistrate to deal with emergent situations by imposing restriction on the personal liberties of individuals, whether in a specific locality or in a town itself, where the situation has the potential to cause unrest or danger to peace and tranquility in such an area, due to certain disputes. It confers power to issue an order absolute at once in urgent cases or nuisance or apprehended danger. Specified classes of magistrates may make such orders when in their opinion there is sufficient ground for proceeding under the section and immediate prevention or speedy remedy is desirable.(Moorhouse et al. 2018)

Action under this section is anticipatory. It is utilized to restrict certain actions even before they actually occur. Anticipatory restrictions are imposed generally in cases of emergency, where there is an apprehended danger of some event that has the potential to cause major public nuisance or damage to public tranquility. The gist of action under s.144 is the urgency of the situation' its efficacy is the likelihood of being able to prevent some harmful occurrences. Preservation of the public peace and tranquility is the primary function of the Government and the aforesaid power is conferred on the Executive magistrate enabling him to perform that function effectively during the emergency situations. Besides orders under this section are justifiable only when it is likely to prevent any of the following events from happening:-

1. Annoyance .
2. Injury to human life.
3. Disturbance of public tranquility.

4. Order cannot be made to give advantage to one party.

Thus the provision under section 144 is best suited for avoiding public nuisance and protecting the environment.Different provisions (some of them are indirectly related to environment) under Indian Penal Code, 1860 and Criminal Procedure Code, 1973 have been interpreted wisely by the Indian judiciary for environment protection.(Constitutionalism and Environmental Jurisprudence in India)(Wainger et al. 2018)

Judicial Interpretation of the Scope of Section 133:

Despite the numerous provisions criminalizing instances of pollution which would amount to public nuisance, the efficacy of recourse to them is very limited. This is because of two reasons. Firstly, after a complaint is made to a magistrate under section 190 of the I.P.C., criminal proceeding will have to ensure an adequate evidence of the standard required for criminal proceedings will have to be produced in order to secure a sentence and this may take a long period of time. Secondly, and perhaps more importantly, the maximum punishments (in terms of fine and imprisonment where it is provided for) provided for by the provisions are very low almost negligible making prosecution under these section almost pointless. As opposed to the I.P.C., the Cr. P.C. provides a far better option in preventing environmental damage where it amounts to a public nuisance. Section 133 of the Code gives an executive magistrate vast powers put up a stop to public nuisance. From an environmental perspective the section empowers a magistrate if he considers that a) any unlawful obstruction or nuisance should be removed from any public place or any, way, river or channel which is used by the public or occupation or that b) that the conduct of any trade or occupation, or the keeping of any goods or merchandise, then he may make a conditional order requiring the person causing the nuisance, within a time to be fixed in the order to desist from continuing the nuisance or if he fails to do so, to appear before him on date to be fixed by him and to show cause why the order should not be made absolute. Although the section uses the word ‘may’, it has been held to be mandatory where the circumstances for its use exist. The remedy under section 133 of Cr. P.C. has several advantages that should lead to its choice in seeking to prevent environmental damage. Any person can simply complain to an executive magistrate to set it in motion keeping in mind the mandatory nature that has been read into section 133. It is also comparatively speedier and when evidence is

taken under section 138 it is to be taken as in summons case which provided for trial in a summary manner. In addition s. 144 of Cr. P.C provides for situations of emergency where orders can be passed ex-parte, without giving notice etc. The magistrate has wide powers under s.133 to stop or remove the nuisance even he can pass orders requiring public bodies to perform their mandate. Actually, the true meaning, scope and usefulness of remedy under the Sections 133-144 have been articulated by the judicial interpretation of these provisions for the benefits of people and to avoid environmental damage. (Fontes-Dutra et al. 2018)The various judgments on the same prove this fact.

Appreciating the provision of Section 133 of Cr.P.C., the Madhya Pradesh High Court in **Shaukant Hussain and Anr. v. Sheodayal Saksaina** observed:Section 133 of the Code of Criminal Procedure provide a speedy and summary remedy in case of urgency where danger to public interest or public health is concerned. In all other cases the party should be referred to the remedy under the ordinary law. Paragraph 3 of Section 133 runs as follows:"That the conduct of any trade or occupation, or the keeping of any goods or merchandise, is injurious to the health or physical comfort of the, community, and that in consequence such trade or occupation should be prohibited or regulated or such goods or merchandise should be removed or the keeping thereof regulated."It will be obvious that the word "community" in this paragraph is deliberately used, and that word has a definite meaning. It means the public at large or the residents of an entire locality. The expression "public nuisance" has been defined in Section 268 of the Indian Penal Code as an act or illegal omission which causes any common injury, danger or annoyance to the public or to the people in general who dwells or occupies property in the vicinity.

In **Ramachandra Malohirao Bhonsle v. Rasikbhai Govardhanbhai Raiyani** the Court observe as follows;The matter was related Installation and use of electric motor for lifting water to supply it to other flats in the complex. It caused nuisance to the petitioner who had purchased flat before installation of the motor. The matter was reported to Sub-Divisional magistrate. Sub-Divisional Magistrate directed that the respondent should remove the electric motor installed below the flat to eliminate noise pollution and electric motor pump should be shifted and installed within the premises so that it causes no noise pollution. It was challenged by the respondent on the basis that jurisdiction under sec. 133 of the Criminal Procedure Code can be

exercised by the learned Executive Magistrate only in respect of public nuisance and not in respect of private nuisance.Further, in response to the order of Magistrate if there is denial of existence of public right over the place or creation of nuisance over a public place then the Executive Magistrate is bound to proceed under sec. 137 of the Code of Criminal Procedure. The Executive Magistrate shall enquire into denial of existence of public right or creating nuisance at public place.The High Court Gujarat observed that The Executive Magistrate should have kept in mind that unless the nuisance was created at a public place no direction could be given under section 133. There may be instances where nuisance is created at a public place but, members or persons belonging to the public may not come forward to move an application under sec. 133 of the Code of Criminal Procedure. In such situation, even one person who is aggrieved from such public nuisance at a public place may report the matter to the Executive Magistrate, and upon such information the Executive Magistrate can proceed under sec. 133(1) of the Criminal Procedure Code. Section 133(1) of the Code of Criminal Procedure provides that, "The Executive Magistrate can proceed under this section on receiving the report of Police Officer or other information." The word "other information" includes information given by any person who is aggrieved from public nuisance. So, what is provided under sec. 133 is that nuisance should be created at a public place. Public place is defined in explanation to sub-section (2) of sec. 133. It says that, "A public place includes also property belonging to the State, camping grounds and grounds left unoccupied for sanitary or re creative purposes."Deciding the question of applicability of section 133 of Cr.P.C. it is clear that it is applicable when there is a violation of public right. Interpreting the public right the Kerala High Court held in Ganapathy v. State of Kerala " where the people of the locality were drawing water during drought i.e. the public had a right for using the well for drawing drinking water and thus there was a public right and as such the Sub Divisional Magistrate had jurisdiction to invoke S. 133 Cr.P.C. The judiciary has widely interpreted the meaning of public right. It is clearly seen from the observation of the Kerala High Court in Augusthy v. Varkey there it was held: "The distinct expression 'public place' &'anyway' clearly illustrate, that the section comprehends not only public places, but "any way" which may be lawfully used by the public. Lawful use by the public of "any way" would bring it within the ambit of the section. A private place may be frequented by public and may become a public place for the time it is used. That apart, "public place" for purposes of the section, is not restricted to a place dedicated to public. The expression 'public' or 'public place' has been

understood in a larger sense. If public have access to a place by right, permission or use, it is a public place, even if it is not public property. One test of ascertaining this will be to see whether there is a right vested in a large number of persons as to make them unascertainable and make them a class unascertainable not by vastness of numbers, but by character of class". As decided by High Court of Rajasthan in Achalachand v. Suraj Raj when there is a danger to the people in neighbor or a family or passersby, the role of section 133 comes into play. If there is a common wall between two houses and if the constructions on this common wall are dangerous which may result in falling down of wall and injuring the neighbours it is a public nuisance and the section 133 of Cr. P.C. would be applicable. 'Of course, Section 133 does not contemplate action by a Magistrate when the danger is only to the inmates of the house or building which is said to be in a dangerous condition. As soon as danger appears to a neighbour also, the conditions of Section 133 of the Code of Criminal Procedure are fulfilled and such a dangerous structure can even be called a public nuisance.' The proceedings under Part B of Chapter X are of a summary nature and intended to enable the Magistrate to deal with the cases of emergency and are not intended to settle private disputes between the different members of the public. They are not supposed to be used as a substitute for litigations in a civil court in order to settle a private dispute and if a person has any private right, which he wishes to be enforced, he should take recourse to the civil Courts. The obstruction, which is not caused to the public in general but to some individual of a particular villages, does not fall under Section 133 Cr.PC.(Darwara Singh v. State of Rajasthan (1991)(1)WLN441.)

The Court has put check on the abuse of power under section 133. The mandate of the Court is very clear. Where in proceedings under Section 133, Cr. P.C., the opposite party denies, the existence of a public right in respect of the land in question, it is the duty of the Magistrate to hold an inquiry under Section 139-A with a view to ascertaining whether there is any reliable evidence in support or the denial on the part of the opposite party, and to record a clear finding on the point before proceeding further. He cannot make his original order absolute under Section 137 without recording any finding under Section 139-A.(Khan, I.A., Environmental Law, ed. 2nd , 2002, p.39)

Judicial Approach: Balancing the Right to freedom of Trade and Right to Clean Environment:

Judicial activism in use of provisions on public nuisance in the Criminal Procedure Code was rare in the early cases because the courts adopted several self imposed restrictions. A major element of judicial attitudes which restricted efficacy of the law and which can be deduced from the study of early cases arose whenever the issue of public nuisance conflicted with the carrying on of trade or business of the accused. The trend was akin to the common law traditions of recognizing individual rights in trade, business and property, rather than being aligned to the 'social justice or human rights jurisprudence with its bias towards public interest and safety of the people at large. This attitude continued till 1980s. It is clearly evident from the approach of the Supreme Court in Ram Autar v. State of Uttar Pradesh when the occasion came for the Supreme Court to interpret s.133 of Criminal Procedure Code, 1973. The judicial rationale in this case did not show much difference from its earlier attitude. In this case, the three appellants carried on trade of auctioning vegetables. As a consequence, many carts in which vegetables were brought were parked in front of residential houses. This caused obstruction and inconvenience to the users of the road. The Magistrate intervened with an order under Section 133 of Cr. P.C. the high court of Allahabad dismissed the application for revision with opinion that:(Abraham,C.M.; Environmental Jurisprudence in India, 1999. Kluwer Law International.)

When it is clear that the business of auctioning vegetables cannot be carried on without causing obstruction to the passersby, the conduct of the business can be prohibited even though it is carried on in a private place. But the Supreme Court held that this proposition of High Court is too wide, construed the provision narrowly and allowed the appeal. The bench of Justice Das Gupta who delivered the Judgment andJustices J.L.Kapur and Raghubar Dayal stated that:It appears to us that the conduct of the trade of this nature and indeed of other trades in localities of a city where such trades are usually carried on is bound to produce some discomfort though at the same time resulting perhaps in the good of the community in other respects.In making the provisions of section 133 of the Code of Criminal Procedure, the legislature cannot have intended the stoppage of such trades in such part of town, merely because of the discomfort

caused by the noise in carrying on the trade.The comparison of this judgment with the judgment in Gobind Singh v. Shanti Sarup clearly indicates the change in the judicial attitude after the Stockholm Conference in 1972. The case of Gobind Singh was decided in 1979 by the Supreme Court, a bench consisting of Justice Chandrachud, Justices Sarkaria and Chinnappa Reddy. In this case the Sub divisional Magistrate had made absolute a conditional order under section 133(1) of the Criminal Procedure Code. The order required a baker to demolish chimney of his bakery as it was found that the construction of the bakery and the volume of smoke emitted by it would play havoc with the lives of people living nearby. According to the order, the baker should cease trading at this particular site and should not light the oven again. The baker appealed by special leave to the Supreme Court. The Supreme Court held: We are of the opinion that in a matter of this nature where what is involved is not merely the right of private individuals but health, safety and convenience of the public at large. The safer course would be to accept the view of the learned magistrate who saw for himself the hazard resulting from the working of the bakery. Although the Supreme Court dismissed the appeal and upheld the Magistrate's order, it nonetheless modified the same, holding that: Preventing the appellant from using the oven is certainly within the terms of the conditional order, but not so the order requiring him to desist from carrying on the tradeoff a baker at the site.(M.Krishna Panicker v. Appukuttan Nair)

One can discern a cautious judicial approach here when the issue apparently affects the individual's fundamental rights to trade and occupation guaranteed under Article 19 of the Constitution.

CONCLUSION AND SUGGESTION:

From the above judgments it is very clear that the Indian judiciary has tried to interpret the provision of section 133 to provide speedy and simple remedy for the problems of environmental pollution. Though there are some slips in the interpretation made by the judiciary in situation of conflict of laws. But this has been resolved by later judgments wherein the judiciary has tried to interpret the true nature and scope of the provision under section 133 of Cr. P.C. and the provision under special laws with the objective to secure right to healthy environment to people of India.Section 144 of the Code has to be seen as a significant provision conferring wide powers upon the Magistrate to deal with urgent cases of nuisance or apprehended danger and

tranquillity. This magisterial power has been exercised only for the purpose of preventing public disorder arising out of public unrest or riot situations. The potential of this provision is vast, but it does not appear to have been utilised effectively in cases of environmental harm.

The provisions in the old Indian law, which have a bearing on the environment, have hardly been used in the past. The consciousness to protect the environment was not as strong then, as it is today. Unless there was awareness on the part of the people to approach the authorities neither the government nor the courts would have had the opportunity to make use of the statutory provisions.

The important role played by the judicial activism of the eighties made its impact felt more in the area of the environmental protection than in any other field. Municipal council, Ratlam v. Vardhichand 18 is a signpost. The Supreme Court identified the responsibilities of local bodies towards the protection of environment and developed the law of public nuisance in the Code of Criminal procedure as a potent instrument for enforcement of their duties. in Legal Control of Environmental Pollution, op. cit., p. 90. 18 AIR 1980 SC 1622.

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Environmental Protection: The Role of Liability System in India

This paper reports a study on the functioning of the courts with the purpose of finding out whether the liability system is really effective in protecting and improving environmental quality in India. Since courts were unable to provide adequate redressal under general practice because of legal delays, higher litigation cost and complicated legal procedures, the courts introduced public interest litigation. The inferences drawn from the empirical work analysed in the light of the theory of the liability system reveal that the courts are unable to provide incentives to the tortfeasor because of informational disadvantages in the case of scientific knowledge, legal delays, poor monitoring of implementation of orders, etc. There is thus a need to improve the functioning of the liability system by making necessary changes not only in the substance of the law, but also in the working conditions of the courts to protect and improve environmental quality in India.

P M Prasad

I Introduction

The motivation for this paper is the trade-off between economic growth and its adverse impact on the environment. Although the market system ensures profits to producers, and satisfaction to consumers, there is no internalisation of the externality caused by the adverse impact of growth. Correctives such as voluntary bargain, the polluter-pays principle, taxes and subsidies, or even an ex post liability approach, have their own limitations in the internalisation of the externalities. Thus, there is a need for state intervention to internalise the externality. Indian courts (the liability system), however, adopted a unique approach of public interest litigation to safeguard public interest against the state.

This paper studies the use of public interest litigation by the Supreme Court and the Andhra Pradesh High Court to improve environmental quality in India. Using a data set of all environmental cases filed and disposed in the Supreme Court and the Andhra Pradesh High Court for the years 1990 to 1999, we find that exercise of writ jurisdiction by these courts helps in the improvement of environmental quality. There are, however, many important qualifiers both in the decisions made by these courts and in the implementation of their orders. We find that variables like a visit by the court to the polluted site, time taken to decide the case and implementation of the order play a positive role in explaining the improvement of environmental quality.

The law and economics literature has focused on the role of legal institutions and common law rules in achieving efficiency and distributive goals [Calabresi 1970, Landes and Posner 1987, Shavel 1987], particularly in the area of environmental policy [Polinsky 1980, Landes and Posner 1984, Tietenberg 1989, Kronhauser and Revesz 1994]. This is an ex post approach where parties pay damages after the harm has occurred. Under this approach, courts set the due level of care based on the nature and facts of the case, if harm occurs. On the other hand, regulation is an ex ante approach, where parties pay a fine after violating regulatory standards, sometimes even before harm has occurred. Standards are defined by the state, which also plays a major role in the enforcement of laws.

There is an overlap between the liability and regulatory approaches to environmental protection. On the one hand, compliance with regulatory standards does not automatically relieve the party from the liability but, on the other hand, non-compliance with regulatory standards does not necessarily make it liable. It may, therefore, be necessary to use an optimal mix of these two systems, using them as substitutes and complements to correct for the externalities.

In the case of joint use of liability and regulation, courts should use a tort liability as a temporary substitute for regulation, when regulation appears to be inefficient. After the correction by regulatory measures, courts should resolve the conflict between ex ante and ex post approaches. Thus the optimal-mix of alternative legal system is one where regulatory authorities set the minimum standards and courts take into consideration these standards and award damage compensation, since the regulatory standards are insufficient to internalise the risk of harm. Similarly, the minimum standards of regulation may perhaps reduce the risk of harm in the event that the liability system is unable to do so.[1] Thus, the optimal mix of liability and regulation should provide incentives to the parties to take precautionary measures in order to reduce the risk of harm.[2]

The paper is organised as follows. Section II lays out the environmental protection system in India, Section III deals with policy implications, Section IV focuses on suggestions, and the Section V is a summary and conclusion.

II
Environmental Protection System in India

Environmental Laws

The Indian Constitution provides for power sharing between the federal and state governments. Parliament has the power to legislate for the whole country, while the state legislatures are empowered to make laws only for their respective territorial jurisdictions. Under Article 246 of the Constitution, the subject areas of legislation are divided between the union and the states into three lists, union, state, and concurrent list. Central law prevails over state law in the concurrent list,[3] however, state law prevails if it has received presidential assent. The Constitution also provides that the centre may enact laws on the state list, after receiving consent from the respective states.[4]

After the 1972 UN Conference on Environment and Human Development at Stockholm, the Indian government incorporated Articles 48A,[5] Article 51A(g),[6] and 253,[7] to the Indian Constitution. On the basis of these articles, parliament enacted the Prevention and Control of Pollution Act, 1981 (Air Act), and the Environmental Protection Act of 1986.

An outline of the environmental legislation in India is given below:

(1) *The Water Act of 1974 (Amendment, 1988)*: This is the first law passed in India whose objective was to ensure that domestic and industrial pollutants are not discharged into rivers and lakes without adequate treatment. The reason is that such a discharge renders the water unsuitable for drinking, irrigation and to support marine life.

In order to achieve its objective, pollution control boards at the central and state levels were created to establish and enforce standards for factories discharging pollutants into bodies of water. The state boards are empowered to issue consent for establishment (CFE) whenever a firm wanted to establish a new factory and also issue consent for operation (CFO) for existing factories. They were also given the authority to close factories or, in the case of disconnecting power and water supply, issue directions to the concerned departments for enforcement of boards standards.

(2) *The Air Act of 1981 (Amendment, 1987)*: The objective of the Air Act of 1981 was to control and reduce air pollution. The working of this act and the enforcement mechanisms are similar to that of the Water Act. What was novel was that the act also called for the abatement of noise pollution.

(3) *Environmental Protection Act, 1986 (The EP Act)*: The objective of the EP Act is to protect and improve the environment in the country. It is an umbrella legislation that consolidated the provisions of the air and water acts. Environmental disasters[8] prodded the Indian government into passing comprehensive legislation, including rules relating to storing, handling and use of hazardous waste.

The EP Act empowered the Indian government to make rules and regulations to fulfil its objectives. Under this act and its rules the government takes all necessary steps, such as the formulation of national environmental standards, prescribe procedures for managing hazardous substances, regulate industrial locations, establish safeguards for preventing accidents, and collect and disseminate information regarding environmental pollution. It also empowered the government to set up parallel regulatory agencies to protect parts of the environment and to delegate its powers to such an agency. For example, the government could set up an agency to protect coastal resources.

The EP Act provided for civil and criminal penalties for the violation of its pollution standards. For example, it imposes a penalty for non-compliance of standards with a fine of up to Rs 1,00,000 or imprisonment up to five years, or both.

(4) *The Product Liability Insurance Act, (1991)*: The focus of this act was to provide for the payment of immediate compensation to the victims of industrial accidents.

Enforcement of Environmental Laws

Environmental laws are enforced not only by pollution control boards set up at federal and state levels, but also by the Supreme Court and the high courts of states through a process called public interest litigation (PIL). Before describing the use of PIL, it is instructive to learn about the structure of the Indian judicial system.

(1) *Supreme Court*: The Supreme Court is the apex court that has both original and appellate jurisdiction.[9],[10] It is under this article that the court initiated the concept PIL which is unique to the Indian court system. Under it, any individual or group of individuals can ask the court for relief against the actions or the lack thereof of the government or its agencies. The court issues a writ of mandamus ordering the government or its agencies to perform its duties that are mandated by the law.

(2) *High Courts*: The high court is the apex court of every state of the Indian Union and is constituted under the provisions of the Indian Constitution. It, too, has writ jurisdiction under Article 226 of the Constitution.

(3) *PIL and the Indian Courts*: The Indian liability system adopted PIL to safeguard the public at large by increasing its accessibility. Under the provision of the PIL, a letter to the courts could be treated as a petition. The courts even provide legal aid to argue the case on behalf of the petitioner. The concept of PIL was initially adopted by Krishna Iyer in 1976 (without assigning the terminology) in the Mumbai Kamgar Sabha vs Abdulbhai.[11] In fact, the terminology 'public interest litigation' was used in Fertilisers Corporation Kamgar Union vs Union of India.[12]

Table 1: Environmental PIL Cases Filed and Disposed of by the High Court of Andhra Pradesh

Year/Category	Air	Water	Air and Water	Miscellaneous	Total	In Per Cent
Cases filed						
1990	2	0	0	0	2	0.77
1991	1	1	1	0	3	1.16
1992	1	0	2	0	3	1.16
1993	1	0	1	1	3	1.16
1994	6	1	0	0	7	2.70
1995	5	2	0	3	10	3.86
1996	12	8	1	8	29	11.20
1997	28	14	11	21	74	28.57
1998	22	14	5	11	52	20.08
1999	41	11	9	15	76	29.34
Total	119	51	30	59	259	100.00
In per cent	45.95	19.69	11.58	22.78	100.00	
Cases disposed						
1990	2	0	0	0	2	1.02
1991	1	1	1	0	3	1.53
1992	1	0	0	0	1	0.51
1993	1	0	1	1	3	1.53
1994	5	1	0	0	6	3.06
1995	4	2	0	3	9	4.59
1996	11	8	1	7	27	13.78
1997	24	13	9	15	61	31.12
1998	17	9	2	5	33	16.84
1999	33	7	7	4	51	26.02
Total	99	41	21	35	196	100.00
In per cent	50.51	20.92	10.71	17.86	100.00	

Note: Miscellaneous includes cases against environmental pollution in general, like illegal encroachment, siltation, pollution, etc, construction of buildings, water supply, sand exploitation, burial ground, hazardous wastes, establishment of ports, water cess, laying of roads and a few cases unable to categorise.

Source: State Pollution Control Board, Andhra Pradesh.

However, the concept took roots firmly in the Indian judiciary in S P Gupta vs Union of India.[13]

(4) *Courts and Environmental PIL*: We focus on the use of the court system and the writ jurisdiction of the Supreme Court and high court to enforce laws to improve environmental quality in the country. We study all cases filed in the Supreme Court and the Andhra Pradesh High Court for the years 1990 to 1999. In each of these courts, we study the number of cases filed, their nature, the decision of the court, whether expert opinion was sought, the time taken from the date of filing to the final disposition of the cases and, finally whether the court's order was implemented.

We collect data on the original disposed environmental PIL cases[14] under the provisions of Indian environmental laws. The data is classified into categorywise, (like air, water, etc) filed, and disposed cases.

Decisions of the environmental PIL cases may be classified into four types. They are: (i) In favour of complainant (CF), (ii) Complaint withdrawn (CW), (iii) Against complainant (CA), (iv) Dismissed on technical grounds (D on TG).

As a result, we have collected data on the cases filed and disposed; on what categories of cases were filed; the pending rate of the cases; and the time taken to dispose of these cases.

Courtwise Analysis

Andhra Pradesh High Court: Cases Filed and Disposed

Table 1 summarises the PIL cases filed in the Andhra Pradesh High Court for each year from 1990 to 1999. A total of 259 PIL cases were filed in these years, of which 119 were under the category of air pollution, 51 were under the category of water pollution and 30 cases under both categories. It is clear that PIL is now increasingly used for solving environmental problems in the state. While only 0.77 per cent of the cases were filed in 1990, 29.34 per cent of the total cases were filed in 1999. The fact that only 259 cases were filed in 10 years in Andhra Pradesh does not, however, imply that there were no pollution problems in the state. The low levels of filing may be the result of either a lack of awareness or apathy among citizens.

Table 1 also summarises the cases disposed of by the court each year. Only 196 cases were disposed of after final determination by the court. Of these, 99 cases were in the category of air pollution, 41 in the category of water pollution and 21 cases under both categories. It should be noted that the percentage of cases disposed of increases as the number of PIL cases filed has increased.

Decisions of the AP High Court: The cases decided in favour of the complainant were 61 per cent of those disposed of by the high court in the years of this study (Table 2). However, the complainants withdrew approximately 12 per cent of the cases that were filed. We take this as a positive sign and argue that the reason for the withdrawal is the possibility of out of court settlement where the government or its agency accepted the claims of the complainant that it failed to curb environmental pollution.[15]

Time taken by the court: The court disposed of only 29 per cent of the cases filed within 180 days and 48 per cent of those filed within a year (Table 3 and Figure 1).[16] The primary reason for this delay is that, in India, the work of the judiciary moves at a snail's pace. Lawyers try to prolong the case by taking advantage of adjournment provisions, and the courts too liberally grant adjournment, particularly because of the involvement of several government officials.

Supreme Court of India: Cases Filed and Disposed

A total of 58 environmental cases were filed and 36 disposed of in the period of the study. Of these, 10 cases were filed under the air pollution category, 17 under the category of water pollution, and seven under both categories. Of the case disposed of five were under the air category, 12 under the water category and five under both categories (Table 4).

Decisions of the Supreme Court: Of the total number of cases disposed of by the Supreme Court, 39 per cent were in favour of the complainant. The decision on the complainant dispute, the cases decided in favour of the complainant, 11 per cent of the cases filed were withdrawn (Table 5)

Time taken by the court: The SC was unable to dispose of 72 per cent and 66 per cent of the total cases received within 180 days and a year, respectively (Table 6 and Figure 2).[17]

Comparison of AP High Court and Supreme Court

We next turn to the functioning of these two courts in the Indian judicial system. Figure 3 is a useful reference in this regard. We can make two points. The first is that the pending rate of cases is lower in the high court than in the Supreme Court. An explanation is that the high court, in a majority of the cases, did not seek expert advise and accepted the position of the pollution control board based on the affidavits of its officials.[18] Second, the high court disposes of cases in favour of the complainant by directing the state pollution control board to take the necessary action. It is for this reason that most of the cases are decided in favour of the complainant in the high court, whereas, the Supreme Court delves into the argument in greater detail. Both these factors play a role in the fact that the time taken to dispose of cases in a period that is greater than one year is greater for the Supreme Court.

The focus of this paper is to determine whether the courts play a role in pollution abatement. To test this hypothesis we run the regression:

$$EQILS = \beta_0 + \beta_1 CLOAW + \beta_2 ENLAW + \beta_3 TTCDC + \beta_4 SPOTV + \beta_5 BRIBE + \beta_6 IMPOR + \beta_7 COMBO + \epsilon \quad ...1$$

The dependant variable is EQILS, which stands for 'environmental quality improvement through liability system'. EQILS is broadly defined by taking into consideration the award of remedy by the court based on complainants' claim, implementation of the court order by implementing agency, and monitoring the status of implementation of the order by the court itself. We define this variable as:

– If the court awarded remedy to the complainant, and the implementing agency implemented the court order as awarded, then there is a 100 per cent improvement in the environmental quality;

– If the court awarded remedy to the complainant, but the implementing agency did not implement the court order as awarded then we assume that there is a partial improvement in the environmental quality. It is based on the argument that the concerned factory at least tries to start the process of prevention of environmental pollution in order to remain in business. We even assume a positive impact when, for example, the court awarded only a 25 per cent remedy and the implementation agency did not implement the order as awarded. In such a case, the tortfeasor he himself tries to comply with minimum 5 per cent of the award remedy by adopting pollution abatement measures.

– If the court dismissed the petition of the complainant for technical reasons, we assume that there is at least a 50 per cent

probability in the improvement of environmental quality if the trail reached its logical conclusion.

The independent variables includes complainants claim over the court award (CLOAW),[19] and we would expect a positive relation between CLOAW and EQILS. The second independent variable is 'engagement of a lawyer' (ENLAW). The engagement of a lawyer by the complainant increases the chances of getting full relief. Thus, the engagement of a lawyer is a dummy variable and is assigned 1 if a lawyer is engaged by the complainant and 0 if no lawyer is engaged.

Time taken by the court to dispose case (TTCDC) is the third independent variable and is measured in terms of number of days between the date of filing of the complaint and the date of disposal of the case by the liability system. Thus, the longer the duration of the case the lesser is the probability of controlling the impact of environmental pollution.

The 'spot visit' to the pollution site by the judges is given by SPOTV. The spot visit by the judges to the pollution site provides factual and first-hand information about the severity of the environmental pollution. Moreover, it allows the judge to experience the pollution problem personally. Thus, it may enhance the understanding of the problem by the judge, who can then sanction the appropriate remedy. So, spot visits by the judge to the pollution site carry a value of one and otherwise 0.

The 'bribe' (BRIBE) variable is to control for the fact that the implementation of the court order is subject to bribing officials such as officials of the courts and the pollution control boards. It should be noted that the concept of bribing occurs at various stages, such as the filing of the petition, placing of the petition before the judge, preparation of expert reports, implementation of the order, etc. We argue that if there is a bribe, then there are better chances of implementation of the court order. Thus, when there is a bribe paid this variable takes on the value of 1 and absence of bribe a value of 0.

In a country like India, it is difficult to enforce the order of the court. Very often, the agency in charge of implementation does not do so. In order to ensure compliance, therefore, the court orders the implementing agency to periodically file a status report. Thus, the 'implementation of the court order' (IMPOR) is an important factor to protect and improve the environment through the liability system. So, implementation of the court order takes on the value of 1 and the non-implementation of the court order is 0.

The next variable is 'complaints based on newspaper report or own experience' (COMBO). It may influence the award because newspaper based complaints may be unable to show strong evidence and may also be unable to have strong arguments compared with own experience-based complaints. Thus, the complaints based on the experience of the complainant are assigned a value of 1 and the complaints based on newspaper reports are given a value of 0.

It is often difficult to get a data set for a study of this nature. We compile the data by sample survey and also from state agencies like the Andhra Pradesh Pollution Control Board (APPCB), Central Pollution Control Board (CPCB), and the ministry of environment and forests (MoEF). In addition, annual reports, acts and brochures have been utilised. The data has been collected from the selected courts, one at the state level, the High Court of Andhra Pradesh and the Supreme Court.

The environmental cases are divided into strata or groups such as types of cases like air pollution, water pollution, different types of decisions such as complainant favour, complainant against, complaint withdrawn, and dismissed on technical grounds, and for different years. Thus, in order to give equal representation from all strata the method of stratified random sampling is used. Forty-nine cases from the AP High Court and 18 cases from the SC have been chosen for its review. Based on a review of the cases, questionnaires were prepared for the complainants in order to obtain their opinion on the functioning of courts. The selected complaints were administered a structured questionnaires.[20] Of the 67 selected appellants from these courts, only 32 appellants were interviewed for reasons such as poor response from the respondents or change of address of the respondents. The views of the complainants are analysed to evaluate the effectiveness of the liability system in redressing complainant grievances.

After running the regressions stated in equation 1 we give the results in Table 7.

The F value is statistically significant at the 1 per cent level and rejects the null-hypothesis of 'environmental quality improvement through liability system is not influenced by other determinants'. We also find that the variables are of the correct sign and significant at different significance levels. The implication is that environmental quality will improve through the liability system when there is strict implementation of court orders. We also find that the time element is important, if the

Table 2: Decisionwise Environmental PIL – Cases Disposed of by the AP High Court

Decisionwise	Category/Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total	Pecentage
	Air	2	1	0	0	3	2	9	20	14	10	61	31.12
Complainant favour	Water	0	0	0	0	0	2	8	10	5	5	30	15.31
(CF)	Air and water	0	1	0	0	0	0	1	6	0	5	13	6.63
	Miscellaneous	0	0	0	0	0	0	6	6	3	1	16	8.16
	Total	2	2	0	0	3	4	24	42	22	21	120	61.22
	Air	0	0	0	0	0	0	0	0	0	15	15	7.65
Complaint withdrawn	Water	0	0	0	0	1	0	0	1	0	0	2	1.02
(CW)	Air and water	0	0	0	0	0	0	0	0	1	1	2	1.02
	Miscellaneous	0	0	0	0	0	0	1	2	0	1	4	2.04
	Total	0	0	0	0	1	0	1	3	1	17	23	11.73
	Air	0	0	1	1	1	2	1	1	1	1	9	4.59
Complainant against	Water	0	1	0	0	0	0	0	0	1	0	2	1.02
(CA)	Air and water	0	0	0	0	0	0	0	2	0	0	2	1.02
	Miscellaneous	0	0	0	0	0	1	0	0	1	1	3	1.53
	Total	0	1	1	1	1	3	1	3	3	2	16	8.16
	Air	0	0	0	0	1	0	1	3	2	7	14	7.14
Dismissed on technical grounds	Water	0	0	0	0	0	0	0	2	3	2	7	3.57
(D on TG)	Air and water	0	0	0	1	0	0	0	1	1	1	4	2.04
	Miscellaneous	0	0	0	1	0	2	0	7	1	1	12	6.12
	Total	0	0	0	2	1	2	1	13	7	11	37	18.88
Grand total		2	3	1	3	6	9	27	61	33	51	196	100.00

Note: Miscellaneous includes cases against environmental pollution in general, like illegal encouroachment, siltation, pollution, etc. Construction of buildings, water supply, sand exploitation, burial ground, hazardous wastes, establishment of ports, water cess, laying of roads, and a few cases not categorised

Source: Compiled from the Registers of the Andhra Pradesh State Pollution Control Board, Hyderabad.

courts dispose of environmental cases within the workable time limit further degradation of the environment can be prevented. We also find that the empirical analysis supports the judges' spot visit to the pollution site and that it enhances environmental quality. Similarly, remedial awards by the courts lead to environmental quality improvement in the country. The high R^2 and adjusted R^2 values reveal that the influence of error term on the dependent variable is negligible.

Generally, one can argue that the filing of a complaint based on (COMBO), the newspaper reports may weaken the chances of getting remedial awards from the courts. The reason is that the complainant may not have full information about the facts of the case. In addition, he may not have a keen interest in pursuing the case for the purpose of improving environmental quality. However, through the analysis we are unable to ascertain that complaints based on newspaper reports had any significant impact on environmental quality improvement through the liability system.

Similarly, ENLAW, is not statistically significant, implying that we are unable to conclude any significant impact on environmental quality improvement through the liability system. This does not, however, mean that the former does not have any impact on the latter. Usually, some of the complainants may get legal aid under the provisions of the PIL. The complainants have to seek the help of the lawyer.

The lawyers help the court in terms of reducing the disposal time, administrative costs, and finding out relevant case references. On the other hand, they try to take advantage of the provisions of the adjournment.

In the case of BRIBE, one can say that the chances of getting a favourable remedy award from the liability system may be dependent on the bribe paid to the concerned authority. However, we are unable to find any significant impact on environmental quality improvement through liability system. It may be because both parties equally have interests at stake.

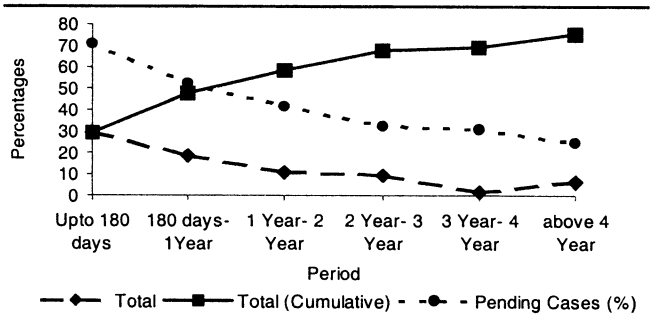
Table 3: Time Taken by the AP High Court to Dispose of Environmental PIL Cases

	CF	CW	CA	D on TG	Total	Percentages
Up to 180 days	12	2	1	4	19	38.78
180 days-1 year	6	1	1	4	12	24.49
1 year-2 years	7	0	0	0	7	14.29
2 years-3 years	4	1	1	0	6	12.24
3 years-4 years	1	0	0	0	1	2.04
Above 4 years	2	0	1	1	4	8.16
Total	32	4	4	9	49	100.00
Percentages	65.31	8.16	8.16	18.37	100.00	

Source: Compiled from the original files of environmental PIL cases of the High Court of Andhra Pradesh.

Figure 1: Time Taken to Dispose of Cases

*****	Up to 180 Days	180 days-1 Year	1 Year-2 Years	2 Years-3 Years	3 Years-4 Years	Above 4 Years
Total	29.34	18.53	10.81	9.27	1.54	6.18
Total (cumulative)	29.34	47.88	58.69	67.95	69.50	75.68
Pending cases (per cent)	70.66	52.12	41.31	32.05	30.50	24.32



Note: ***** It represents the time taken by the High Court of Andhra Pradesh to dispose of the environmental PIL cases from the total number of cases filed by the complainants during 1990-1999. (Similar calculations were made for the Supreme Court.)

Views of the Complainant Counsel

Five lawyers who dealt with environmental pollution cases were interviewed in order to get their opinion on the functioning of the courts. There were mixed opinions about the judges' spot visit to the polluted area in order to obtain first hand information on the adverse impact of environmental pollution.

The lawyers felt that many NGOs were carrying out environmental activities/programmes in order to make money. A majority of them stressed the need for separate environmental protection courts. Moreover, a separate court provides an opportunity to appoint multidisciplinary experts, speedy remedial measure against disputes, in-depth court room arguments to pass unbiased orders, monitoring of the implementation of the court order, etc.

They also have a negative opinion about the functioning of PCBs because of their regulatory capture and corrupt practices. For example, PCBs issue CFEs to industries subject to certain conditions but the industries never meet these conditions. They also feel that courts are unable to act as a deterrent in the case of non-implementation of their order by the government.

They also feel that judges are influenced by interest groups such as politicians, bureaucrats, and industrialists. In case of judges, the self-interest may work in the form of promotions or post-retirement consulting role. They also voiced doubts about the functioning of the liability system in India, in case of:
- The adversarial way of looking at the environmental PIL cases;
- The costs, and usefulness of expert committees reports; and
- Coordination among the constitutional functionaries to protect the environment in the country.

III
Policy Implications

Need for Expert Advice

The courts depend on the advice of experts especially on scientific and technical knowledge like natural carrying capacity, natural regenerative capacity, consequences of emissions, and the effluents effectiveness of installed technologies to improve environmental quality. Expert advice is required to set the socially desirable due level of care by the liability system. The courts have taken expert opinion on scientific and technical knowledge about the implications of environmental pollution on ecology and human health.[21] A brief summary of an illustrative case is discussed below.

The complainant approached the court against tanneries all along the Palar river, whose effluents caused air and water pollution, land degradation and health effects. In fact, 450 tanneries out of 550 were located in the North Arcot Ambedkar (NAA) district, Tamil Nadu.

The court considered the reports of the Tamil Nadu Agricultural Research Centre, the Peace Trust, the Community Action for Development, the Hydrological Investigations, the Tamil Nadu State Pollution Control Board, the National Environmental

Engineering Research Institute, and the Central Pollution Control Board. The court then pronounced the following order

– The GoI shall constitute an authority under Section 3 (3) of the EP Act;

– An industry may set up ETP now but it is liable for its past pollution;

– The court imposed pollution fine of Rs 10,000 on each of tanneries in the five districts of Tamil Nadu.

– The government should not allow any industry within the prohibited area and the old ones should relocate.

Ability to provide compensation: The courts are also unable to provide adequate compensation if environmental pollution causes harm to the citizen, if the claim is based on sentimental value or mental agony. This is because the liability system is unable to calculate and award the cost of compensation equal to the subjective value based on the claim of the complainant. This is mainly because the courts want to calculate and award the costs of compensation based on objective value.[22] A brief summary of the case is given below:

The association filed the petition against industrial pollution, particularly, the Hindustan Zinc,[23] in and around villages[24] of Visaka.[25] The industry had established zinc and lead smelter units at Visakhapatnam in 1977. The effluents of the industry caused water pollution with high concentration of heavy metals like cadmium, mercury, zinc sulphate and sulphide. Thus, the water in the local wells was unfit for human consumption and irrigation purposes. Because of these conditions paddy fields became barren, livestock was harmed, and 20 children died. Moreover, the villagers suffered from skin diseases and mental disorders. The association met and gave representations to the concerned authorities, and parliament committee. In response, the representatives of the AP legislative house committee and the industry[26] met and agreed on a package of Rs 4 crore to shift the 975 families who have been residing in the villages for more than a century. This package did not cover compensation for victims and restoration of ecology.

The APPCB in its affidavit stated that it was taking all measures to prevent environmental pollution. The industry promised the board to release the agreed package of Rs 4 crore and the supply of drinking water to affected villages.

The industry deposited the money for shifting villagers but the villagers did not want to shift to other places because of the sentiment attached to the villages. They were under a misperception or ignorance about the consequences of living in polluted areas. Meanwhile, the industry had closed down because of its losses. But after the industry closed they argued that there was no need to pay the compensation. The industry succeeded in even slowing down the association by bribing some of its members. As a consequence of the actions of the industry the villages would not be good for human living even after 100 years. Studies about the effectiveness of the effluents revealed that there is a direct link between the industrial effluents and the deterioration[27] of health of the villagers.

The court directed the closing of the industry but did not award compensation to the victims for the restoration of the ecology. Thus, in this case the court did not provide adequate compensation even based on an objective value. So, it clearly indicates that there is a limitation to awards by the courts.

Legal delays: According to empirical evidence, the AP High Court was unable to dispose of 71 and 52 per cent of the total cases received, within 180 days and a year, respectively. Similarly, the SC was unable to dispose of 72 and 66 per cent of the total cases received, within 180 days and a year, respectively. In fact, the sample study indicates that the SC has taken a minimum of 21 days and a maximum of 2,542 days to dispose of the cases. Similarly, the AP High Court has taken a minimum of four days and a maximum of 2,731 days to dispose of the cases. In fact, the common man in India is taking a lot of risk[28] while approaching courts against environmental pollution.

The reason may be either lack of awareness or apathy among the citizens. This shows that the government and non-governmental organisations (NGOs) have to create awareness among citizens about their right to be free from pollution and available remedies against pollution problems through the liability system. Moreover, while reviewing the selected cases in AP, it is found majority of cases that the court neither appointed a commissioner nor sought a third party expert advise before pronouncing judgment. Also, the court not only relied upon the affidavits filed by the APSPCB but disposed also the cases by simply directing the board to take of necessary action against environmental pollution within the scope of the environmental legislation(s).

In addition, the AP High Court rarely monitors the implementation of its orders by directing the implementing agency to file a periodic status report. One can, therefore, raise concerns about the status of the pending rate. There is a need for adoption of measures to reduce the pending rate. Given the sensitivity and severity of adverse impact of environmental pollution there is a need for introduction of a workable time limit to dispose of cases.

The introduction of a workable time-bound approach by courts will help public litigants to get speedy redressal. In addition, a time-bound approach in terms of awarding remedy in environmental PIL cases may not only reduce the negative effects of granting an interim order for rogue industries but also prevent further damage.

Appeals as error correction and delay tactics: The system of appeals is often used to correct errors made by lower courts due to inexperience of judges, time pressure and other constraints. Appeals, however, have adverse affects, because the tortfeasors may

Table 4: Environmental PIL Cases Filed and Disposed of by the Supreme Court

Year/ Category	Air	Water	Air and Water	Miscellaneous	Total	In Per Cent
Cases filed						
1990	2	1	3	0	6	10.34
1991	2	3	1	1	7	12.07
1992	0	3	0	2	5	8.62
1993	0	1	0	0	1	1.72
1994	1	2	0	4	7	12.07
1995	0	0	0	6	6	10.34
1996	0	1	1	7	9	15.52
1997	2	3	0	1	6	10.34
1998	2	3	0	1	6	10.34
1999	1	0	2	2	5	8.62
Total	10	17	7	24	58	100.00
In per cent	17.24	29.31	12.07	41.38	100.00	
Cases disposed						
1990	2	0	2	0	4	11.11
1991	2	3	1	1	7	19.44
1992	0	3	0	1	4	11.11
1993	0	1	0	0	1	2.78
1994	0	1	0	2	3	8.33
1995	0	0	0	4	4	11.11
1996	0	1	1	4	6	16.67
1997	1	3	0	1	5	13.89
1998	0	0	0	0	0	0.00
1999	0	0	1	1	2	5.56
Total	5	12	5	14	36	100.00
In per cent	13.89	33.33	13.89	38.89	100.00	

Note: Miscellaneous includes cases against environmental pollution in general, like encroachment, siltation, pollution etc, construction of buildings,water supply, sand exploitation,burial ground, hazardous wastes, establishment of ports,water cess,laying of roads, and a few cases which is unable to categorise.

Source: The Supreme Court and the Central Pollution Control Board, New Delhi.

use the system to delay payment of compensation to the victim. Moreover, judgments may be delivered after several years.

An example of the delaying tactics used[29] is given below. It clearly indicates that the payment of compensation to the victims can be delayed by an appeal to a higher court. Thus, error prevention depends upon quick disposal of the appeals, easy accessibility of courts to the common citizens and consideration of the cost of delay in compensation.

> Jayant Vitamins, was engaged in production of vitamin-C and other products in Ratlam. The effluents were discharged into river Kurel, which is the drinking water source for nearby villages and towns and affected the health of the people. The company got consent for starting production, subject to certain conditions, from the Madhya Pradesh Pollution Control Board (MPPCB). It was valid for a period of 12 months commencing from March 9, 1975. The MPPCB did not renew consent because of violation of its standards. So, the company continued its operations without valid consent, from March 8, 1977. The company approached the appellate authority (AA) against the order of the MPPCB for non-renewal of its consent and obtained an ex-parte stay order. The appeal was dismissed by the AA because the company was not present, during the hearings.
>
> Initially, the GoI filed a suit, in the district court, against polluting industries at Ratlam on June 27, 1977. Jayant Vitamins, was one of the defendants but the GoI asked for no relief because the industry was on the verge of completing the effluent treatment plant (ETP). Moreover, the MPPCB filed an application on October 23, 1981, against the company in the court of chief judicial magistrate, Ratlam. In its order on December 23, 1987, it held that the company should not discharge its effluents into the river. However, it did not obey the order and the MPPCB filed an application in court in 1989 that is still pending.
>
> The petitioner approached the SC and filed writ petition (304/ 1992) against the company on February 30, 1992. The company in its affidavit stated that it produced life-saving drugs, creates employment for 1,000 workers, is in a backward area, and discharges treated effluents in a drainage provided by the industries department. Thus, their contention was that the effluent came from other neighbourhood industries. The firms' pollution consultant (Shah Pollutech Engineers) issued a certificate on September 2, 1992, saying the effluent did not create any health hazard. The SC appointed the CPCB officer as commissioner to make an inspection and submit the report. The commissioner gave a final report as satisfactory, after an offer from the company to improve the situation. The SC accordingly closed the proceedings by stating that the petitioner can pursue the matter with the concerned magistrate or MPPCB.
>
> In spite of making promises to the commissioner, the company did not take steps to prevent water pollution. The petitioner approached the SC once again by filing WP (No 330/ 1995) against the industry. The company in its affidavit stated that the petitioner threatened the company that if it did not pay the money demanded by him, he would make a false complaint to the authorities under the EP Act, 1986. The company also claimed that the effluents were from the neighbouring industries. The MPPCB filed its affidavit but the SC was not satisfied and directed the CPCB to inspect the industries and submit a report. The CPCB in its report on January 16, 1996 made recommendations to the industries to prevent pollution. The SC directed the CPCB to file a status report from time to time in order to monitor the proceedings. However, the SC held the view that the environmental problem and pollution control in Madhya Pradesh be better monitored by the high court than by the SC. So, directed the chief justice of the high court of MP to set up a Green bench to monitor this case as well as other environmental issues in Madhya Pradesh.

Problems in implementing orders: The authorities did not implement the court orders, which not only aggravated environmental degradation but also damaged social relations among the involved parties. In addition, it affected the credibility of the courts in terms of the improvement of the environmental quality in the country.[30] An illustrative case is given below.

> The complainant filed a petition against Sri Sai Wet and Dry Grinder for air and water pollution. It runs for 20 hours a day, and grinds soap nuts to spices and chillies to 'shikakai', which emanate clouds of dust, noise, and vibrations and affects the normal lives of surrounding residents. In addition, the owners of the unit threatened the residents for protesting. The residents made complaints with the authorities but their efforts were in vain. The APPCB served several notices to the unit to shift; however, there was no positive response from the unit. The APPCB further issued a show cause notice to the unit as to why action should not be initiated against the unit under Section 31 (A) of the Air Act (Amendment, 1987) for closure and disconnection of power without further notice.

Table 5: Decisionwise Environmental PIL Cases Disposed of by the Supreme Court

Decisionwise	Category/Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total	Percentage
	Air	1	1	0	0	0	0	0	0	0	0	2	5.56
Complainant favour	Water	0	1	1	1	1	0	0	0	0	0	4	11.11
(CF)	Air and water	0	1	0	0	0	0	0	0	0	0	1	2.78
	Miscellaneous	0	1	1	0	2	1	1	0	0	1	7	19.44
	Total	1	4	2	1	3	1	1	0	0	1	14	38.89
	Air	0	1	0	0	0	0	0	1	0	0	2	5.56
Complainant withdrawn	Water	0	0	0	0	0	0	0	1	0	0	1	2.78
(CW)	Air and water	0	0	0	0	0	0	0	0	0	0	0	0.00
	Miscellaneous	0	0	0	0	0	1	0	0	0	0	1	2.78
	Total	0	1	0	0	0	1	0	2	0	0	4	11.11
	Air	0	0	0	0	0	0	0	0	0	0	0	0.00
Complainant against	Water	0	2	1	0	0	0	1	2	0	0	6	16.67
(CA)	Air and water	0	0	0	0	0	0	1	0	0	1	2	5.56
	Miscellaneous	0	0	0	0	0	1	2	1	0	0	4	11.11
	Total	0	2	1	0	0	1	4	3	0	1	12	33.33
	Air	2	0	0	0	0	0	0	0	0	0	2	5.56
Dismissed on technical grounds	Water	0	0	1	0	0	0	0	0	0	0	1	2.78
(D on TG)	Air and water	1	0	0	0	0	0	0	0	0	0	1	2.78
	Miscellaneous	0	0	0	0	0	1	1	0	0	0	2	5.56
	Total	3	0	1	0	0	1	1	0	0	0	6	**16.67**
Total		4	7	4	1	3	4	6	5	0	2	36	100.00

Note: Miscellaneous includes cases against environmental pollution in general, like illegal encroachment, siltation, pollution, etc. Construction of buildings, water supply, sand exploitation, burial ground, hazardous wastes, establishment of ports, water cess, laying of roads, and a few cases unable to categorise.

Source: Compiled from the Registers of the Supreme Court of India, New Delhi.

The court in its order, directed the APPCB to take appropriate action against the unit in accordance with the law. However, the contempt case was filed against APPCB in the court because the board was informed that after 25 to 30 visits by the complainant the file was not traceable and it would take some time. However, after filing of the contempt case by the complainant petition, the board issued a closure order to the unit and even directed the Andhra Pradesh State Electricity Board (APSEB) to disconnect power supply. The owner of the unit in turn filed W P (No 5603/ 2000) against the closure order of the APPCB on the ground that no appellate authority was constituted to avail of the statutory appeal in order to obtain an interim stay order against the closure of the unit. The APPCB in its affidavit stated that the appellate authority was constituted by G O Ms No 58 dt May 22, 2000. Accordingly, the court disposed the WP on June 23, 2000 directing an alternative remedy to be presented before the appellate authority and to maintain status quo for a period of three weeks. In view of the compliance with the order of the court and as the respondent had obeyed the order of the court, the contempt case was dismissed. According to the complainant the owner of the unit bribed politicians and authorities in order to run the unit even after the court order. For example, the power supply to the unit that was disconnected was reconnected because of the local MLA. In addition, when the residents approached the police station to lodge a complaint against the owner of the unit, the police declined to receive the complaint; when the residents sent the complaint to the police station by the registered post, the owner of the unit threatened the residents. The unit is still in operation. The complainant felt that unless the court monitored the case from the filing of the case up to execution of its order, it was very difficult to protect the environment in the country.

Transfer of SC orders to HC: The court started monitoring its orders by directing the implementing agency to file an affidavit periodically on the status of implementation of the order. This will improve the chances of prevention of pollution in the country. However, the SC in several cases requested the concerned HC to monitor the implementation of its order.[31]

The case is against the waste material disposal (combine) from the municipality and hospitals in Delhi. The Municipal Corporation of Delhi (MCD) is dumping the material (1,000 tonnes per day) just one km away from the bank of Jamuna river, which may contaminate drinking water, particularly during the rainy season, leading to epidemics such as jaundice, cholera, typhoid, etc. In addition, the Wazipur water treatment plant is unable to destroy the bacteria and pathogens through its filter and chlorinate processes. The complainant in his interlocutor application (IA) stated that most of the hospitals refused to test the collected samples (hospital bandage) from the dumping site. Moreover, only a few of the hospitals had an incinerator to burn hospital waste at 1,000°C to 2,000°C. The incinerator at Safdarjung Hospital is out of order. The hospital waste consists of both solid[32] and liquid waste. So, in no case should hospital waste be dumped along with municipal waste.

The MCD, NDMC, Delhi Development Authority (DDA), central and state public works department (C/S PWD), Railways, ministry of health and union territory of Delhi are responsible for disposing of municipal and hospital waste. Affidavits stated lack of civic sense (in the door-to-door garbage collection scheme, even by distribution of polyethylene bags, only 40 per cent of the total households participated), dustbins, absenteeism among the staff, logistical problems (the established compost plant at Okhla was not financially viable), 'Jhuggies' (4.80 lakh people who live in unauthorised slums throw garbage on the road or near dustbins) and floating population may prevent in cleaning up Delhi. Affidavits of ministry of health and union territory of Delhi stated that most of the hospitals did not have an incinerator. However, proposals are under way for some hospitals to have one. The court opined that the Municipal Corporation of Delhi (MCD Act, 1957) and the New Delhi Municipal Corporation (NDMC Act, 1994) has been wholly remiss in the performance of their statutory duties. The inefficiency of the staff, insufficient machinery, non-availability of funds, etc, cannot be grounds for non-performance of statutory obligations.

Based on these facts, SC directed the garbage disposal institute officials to clean Delhi everyday by installation of incinerators at hospitals (both public and private), create awareness among citizens, and by establishment of additional compost plants. The filled garbage sites should be used for tree plantation only. The state government had to provide all logistics to the institutions in order to clean Delhi. The authorities of the institutes and CPCB have to file affidavits from time to time about the progress in cleaning Delhi. The institutions can avail the services of NEERI in order to find out alternative ways (other than land filling) of waste disposal. After several affidavits, directions and issue of contempt of court orders (nobody was sent to prison), there is an improvement in Delhi. However, because of the problems of jhuggies, conflict between MCD and DDA about colony maintenance, etc, the SC transferred the case to Delhi High Court for further monitoring of the progress made by the institutions in cleaning up Delhi.

The complainant stated that he had appeared 48 times in the Delhi High Court after the SC transferred the case in 1996 for further monitoring of implementation of the order. Since then the Delhi High Court has monitored the implementation of the order.

Provision of interim orders: The court pronounces the interim order to one of the parties in order to maintain the status quo

Table 6: Time Taken by the SC to Dispose of Environmental PIL Cases

	CF	CW	CA	D on TG	Total	Percentages
Up to 180 days	1	3	3	1	8	44.44
180 days-1 year	1	0	1	0	2	11.11
1 year-2 years	1	0	0	0	1	5.56
2 years-3 years	1	0	0	0	1	5.56
3 years-4 years	2	0	0	0	2	11.11
Above 4 years	4	0	0	0	4	22.22
Total	10	3	4	1	18	100.00
Percentages	55.56	16.67	22.22	5.56	100.00	

Source: Compiled from the original files of environmental PIL cases of Supreme Court of India.

Figure 2: Cases Disposed of by Supreme Court

	Upto 180 Days	180 days-1 Year	1 Year-2 Years	2 Years-3 Years	3 Years-4 Years	Above 4 Years
Total	27.59	6.9	3.45	3.45	6.9	13.79
Total (cumulative)	27.59	34.48	37.93	41.38	48.28	62.07
Pending cases (per cent)	72.41	65.52	62.07	58.62	51.72	37.93

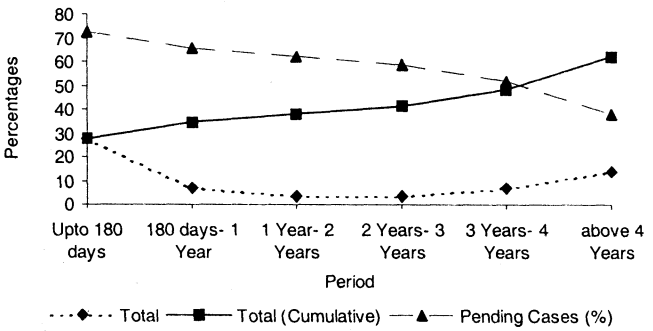
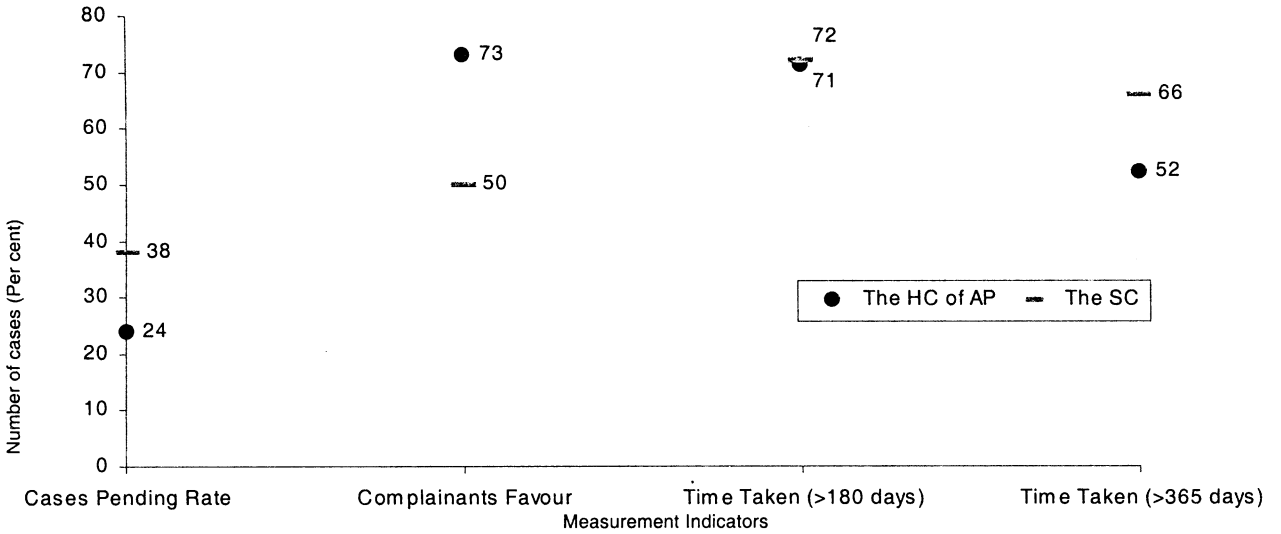


Figure 3: Functioning of Courts



until further orders and final disposal. It may be positive or negative and temporary[33] or perpetual.[34] In case of environmental protection, particularly, one may expect that the interim order is pronounced to immediately arrest environmental pollution. However, the tortfeasor also tries to inflict social costs on society by taking advantage of the provisions of the interim order.[35]

The court itself directed the APPCB to consider the problem of air and water pollution in and around Kattedan, Noor-Mohmad Tank, and the industries without ETP and valid consent (in WP No 1685/1997). Accordingly, the APPCB served closure order on October 14, 1997 to the complainant-run oil refinery. The industry falls under the red category, which is the high pollution potential category.

The industry challenged the APPCB closure order by filing a writ petition in court. It argued that the company deals with agro-based products such as, vegetable oil and other types of oils and extracting by-products thereof. The waste discharged is non-poisonous and there is no smoke or other effluents that are harmful. The complainant took consent from the APPCB (September 6, 1996) and the board initiated the process with the Andhra Pradesh State Financial Corporation for the sanctioning of the second phase loan amount for installation of ETP. The complainant obtained quotation from Montek Environment Management Consultants for ETP.

The complainant made a representation to the APPCB on October 21, 1997 for granting some more time, which was not provided. So the complainant approached the court to declare the impugned closure order as null and void in the interests of justice. In addition he asked for an interim order to stay all further proceedings of the closure order.

The court in its order (November 1, 1997) pronounced an interim stay of all proceedings in respect of closure order dated October 14, 1997 for a period of three weeks.

The APPCB in its affidavit (November 1997) clearly stated that the closure order was based on the court directions and requested the vacation of the interim order. The court, in spite of the APPCB affidavit, extended the interim order (November 24, 1997) until further orders.

Only on August 5, 1998 the court through its order dismissed the interim directions saying that even after a year, no steps have been taken by the complainant to comply with the APPCB orders. It said the court cannot allow the complainant to run its unit causing pollution and violating anti-pollution laws. The only fact taken into consideration by the court was that the petitioner was waiting for the second phase of the loan amount so that it could install ETP.

The APPCB, first of all, shall not provide consent to the company without ETP knowing that the activities of the company fall under the red category (highly polluting industry). The court shall further not provide an opportunity to the company to pollute the environment for more than nine months by using the provisions of the interim order. In fact, these types of orders help in further degradation of the environmental quality in the country.

It is general practice that the interim orders issued in favour of the tortfeasor will be implemented immediately and effectively compared with orders issued in the victims' favour. For example, in a case,[36] the SC pronounced an interim order in 1992 to provide drinking water and health facilities to the victims. According to the complainant, the order was not implemented even by the end of March 2002.

Expert advise and need for spot visit: The courts usually go for expert advice in order to get information on scientific and technological knowledge, which will help to pronounce unbiased judgments.[37]

The petitioner is an employee of Patel Engineering Co, for two and a half year(s) engaged in construction of Srisailam Hydro Electrical Power Project Tunnel[38] for the APSEB. There are 2,000 workers altogether. The work is completely underground and used explosives (such as electrical detonators, gallatin, ammonia), benching, drilling, cement works, dies, proclaims, and diesel truck for mucking purposes. The activity produces poisonous and harmful gases like blasting smoke, dust, ammonia, Gallatin gases, etc. The workers are suffering from tuberculosis, stomach pains, breathing problems, heart pain, headache, eye effects and there were also some fatalities. There is also no dispensary facility for first aid.

The APPCB in its affidavit stated that the company carried out the tunnelling process by drilling holes using compressed air and hydraulic process, and used gallatin and blasting by electrical detonators. It is stated that when the project work was started in 1990, the company used 20 to 100 kg of gallatin per day. The blasting work was carried out at lunch- time on alternate days and no workmen are permitted until the gases are vented out into the atmosphere and the air quality becomes normal. Moreover, the company has provided pipelines and blowers as per the recommendation of the National Institute of Rock Mechanics, Kolar.

The project authorities were asked to procure instant monitors for critical parameters like CO, CO_2, and SO_2. However, the adequacy

of the systems may have to be certified by the concerned mine safety department.

The court in its judgment asked the petitioner to lodge a complaint to the competent authority in APSEB upon receiving the complaint such authority would take appropriate immediate action in the matter.

According to the complainant, there was collusion between the PCB and the company, which resulted in the placing of a misleading report in court by the PCB. In addition, the petitioner's lawyer (legal aid) and the respondent's lawyer too colluded. In his view, judges too favour the rich and the influential people. The complainant faced difficulties in providing causational links, non-cooperation from sample testing labs, and he even received threats from the respondent. According to him, when the project was nearly complete the employer removed many workers, and the people who worked in the project suffered from 50 per cent disability.

The study indicates that in some cases the expert reports did not contain factual information, which misleads the court. This may further enhance the negative externalities in the country. It clearly indicates that the court is unable to provide remedies to the needy. In this case, the court simply relied on the APPCB report and directed the petitioner to approach APSEB. In such types of cases, one can stress the introduction of judges' spot visit to find out the facts of the case. These measures may provide some incentives to the tortfeasors and regulatory agencies to implement existing rules and regulations to arrest pollution. In addition, it will provide an opportunity for the judges and common people to interact with each other on the pollution problem in an informal way and establish stronger social interactions. Hence, the judgment should not only be based on the parties' argument, witnesses and the expert reports within the court room but also the judges' personal assessment of the severity of the environmental pollution at the spot. It will further help the court to set the due level of care, which is equal to the social level of care.

Involvement of lawyers: Lawyers, generally, are expected to provide services to their clients and save them from legal liability or make arguments for damage compensation. In fact, the lawyers too have a code of conduct. However, the materialistic world provides incentives to the lawyers to violate the code of conduct in several ways. For example, there is a nexus between the lawyers of the two parties which often results in deciding the case in favour of the tortfeasor. Since they are well-versed in legal jargon it is easy for them to get their clients off the hook and absolved of liability for misconduct and unethical services. Moreover, the concept of professional protectionism also prevails. The field-work provided some insights about the attitude of the lawyers and their contribution towards environmental quality improvement in the country.[39]

The government granted lease of limestone deposits, which were adjacent to the complainant lands and too close to Vepala Madhavaram village (Malla Chervu Mandal) in Nalgonda district. In addition to limestone quarrying, the APPCB issued a consent order to P R Cements on November 11, 1986 to construct the industry in the middle of agricultural lands. The complainant brought to the notice of concerned authorities even at the time of establishment of the industry and the limestone quarries about its plausible negative externalities such as emissions and effluents that may harm the farmland.[40] The complainant in his writ petition quoted the views of the expert committee, which was appointed by the apex court (in RL and E Kendra v State of UP, AIR 1985, p 652), "closing down lime stone quarries would undoubtedly cause hardship to lessors but it is a price that has to be paid for protecting the rights of the people to live in healthy environment with minimal disturbance of ecological balance and without hazards to them, to their cattle, homes, agricultural lands and undue affectation of air, water and environment". The complainant approached the court in 1990 to get remedial measures; however, the court has dismissed the case in 1997 on the ground that there was no representation on behalf of the petitioner, in spite of several adjournments.

The complainant engaged a lawyer. According to the complainant, the lawyer misguided the court after joining hands with the opposite party lawyer. The industry had purchased the implementing agencies and the lawyers. The cost of litigation was Rs 2,00,000 and he did not attend court during the trial, which indicated he completely relied upon the lawyer.

IV
Suggestions

The court protects the interests of citizens against actions and inaction of the state under the provisions of PIL. It also treats a simple letter against pollution, addressed to the chief justice, as a writ petition and in some cases also provides legal aid. However, there is a need for change in both the substantive as well as procedural laws in order to improve environmental quality in the country.

Transfer of cases from SC to HC: The complainant chooses to approach the SC in order to claim remedial measures against environmental pollution, whether it is at the local, state, or national level. Litigants approach the SC because:

– There is no further appeal against the pronouncement of the remedial award;

– The chances of implementation of court order by the implementing agency will be greater because of the fear of contempt of court;

– The influence of interest groups on judges may be minimal;

– Since the court too treats the letter to a judge as a writ petition and may provide legal aid, the complainant has an incentive to approach the apex court.

However, the court in some cases asked the complainant to withdraw the case and approach the concerned high court. The study also indicates that the cases that were withdrawn from the SC based on the advise of the court and transferred to the

Table 7: Results of the Regression Analysis

Dependent Variable: EQILS Independent Variables	Estimated Coefficients
COMBO	2. 045 (-0. 212)
ENLAW	-3. 082 (-0. 352)
TTCDC	0. 010 (2. 003**)
SPOTV	-16. 922 (-1.706***)
IMPOR	96. 868 (7. 723*)
BRIBE	-2. 391 (-0.284)
CLOAW	-0. 184 (-1. 686***)
CONSTANT	49. 873 (4.121*)
R- Square	0. 812
R- Square	0. 757
F- Value	(F = 14. 779)
Durbin- Watson	2. 153

Notes: *, ** and *** denote significance level at 1, 5 and 10 per cent respectively.
Figures in parentheses indicate t-values.

concerned HC were still waiting to get remedial awards from the latter.

Moreover, data from the SC shows that there are 58 cases filed for the 10-year period 1990 to 1999. Keeping in view the low case filing and other reasons specified above, the court should dispose of the case rather than ask the complainant to withdraw and approach the concerned HC.

Judges' spot visit: The rule makers, as well as implementing agencies are clearly breaking the rules and regulations to protect the interests of the organised polluting industries. In such a situation, the concerned authorities under the influence of interest groups may mislead the court even by filing false affidavits. Thus, there is a necessity for judges to visit the pollution-affected areas in order to pronounce an unbiased judgment. In fact, the opinion data too favours the establishment of spot visits. The study reveals that 84 per cent of the respondents felt that the judges should visit the environmentally affected areas in order to assess the facts of the case. This will, in turn, take care of the restoration of ecology and provide damage compensation.

Monitoring and Implementation of Court Orders

Environmental quality will improve when there is strict monitoring of the implementation of court orders. The court can carry out this activity by simply directing the implementing agency to file reports periodically about the status of the implementation of the orders. In fact, the court might be reluctant to do it because the task of implementation of the court order is completely under the jurisdiction of the executive. However, the findings of the study stress the need for the court itself to monitor or implement the order. This is mainly because of interest groups that are influencing the implementing agency. In addition, the non-implementation of court order at times provides incentives to the tortfeasor to increase levels of pollution.

The courts monitored the implementation of their order in a few cases. Moreover, the SC in some cases requested the concerned HC to monitor its order by establishment of a green bench. High courts are better able to monitor orders in their jurisdiction than the SC. The study hasn't looked at whether the HC too should request its subordinate courts at district level to carry out the task of monitoring of its orders. However, the study reveals that in some cases the transfer of monitoring of the orders by the SC to the HC has slowed its implementation. In addition, there is also a possibility of diluting the entire process of the implementation of the Supreme Court order. Usually one can raise doubts about the attitude of the implementing agency under HC monitoring. It is also not known how many HCs have established a green bench as requested by the SC.

Legal Aid and Accountability

The complainants who approach the courts under the provisions of the PIL may do so because of their own experience or based on newspaper reports. In general, not only are they victims of the activities of polluters but are also unorganised and are unable to participate actively to fight the polluters. In addition, in most of the cases they are unable to mobilise resources and are not even in a position to establish a causational link to the impact of the activities of polluters on ecology and human health. This is mainly because of the lack of necessary information, and provision of facilities (such as laboratory tests) even by state-owned institutions. Thus, the court itself provides legal aid to the public interest litigant. However, the litigants do not have any control over the lawyers who are appointed under the provisions of legal aid. So the responsibility of the lawyer completely relies upon his/her conduct. The study reveals those cases that were argued under legal aid resulted in a lower impact on the improvement of environmental quality. The lawyer who worked under the provisions of legal aid may not have the incentives to argue efficiently and effectively in favour of the public interest litigant. This may send wrong signals to the citizens who desire to approach the judiciary for remedial measures, and in turn may lead to adverse effects on the improvement of environmental quality. Thus, there is a need for introduction of some incentive mechanism for lawyers who work under legal aid to argue the case for environmental quality improvement in the country.

Another method is to provide financial assistance on PIL costs on the provision that the complainant has to repay the loan in reasonable instalments within the stipulated time period. It may not only provide incentives to the complainant to hire a skilled lawyer and use the resources to establish causational links and also improve the accessibility of the courts to the citizens of India.

Establishment of separate environmental protection courts: In the Paryavaran Suraksha Sangarsh Samiti v Union of India and others (W P 94/1990), the SC, discussed the need for a separate environmental protection court because proceedings by way of writ in the SC under Article 32 or the HC under Article 226 are not appropriate to deal with environmental cases filed against private corporate bodies. However, the central government has the power to levy and recover cost of remedial measures under Sections 3 and 5 of the EP Act, 1986. If the central government omits to do that duty, the court can certainly issue appropriate directions to it to take the necessary measures. The central government should strengthen environmental protection institutes and the heads of the institutes should be made personally accountable for their acts of negligence. The idea of environmental audit by specialist bodies created on a permanent basis with the power to inspect, check and take necessary action not only against erring industries but also against erring officers may be considered. Moreover, the opinion data too favours the establishment of environmental protection courts. The study reveals that 81 per cent of the respondents felt that there is a need for separate environmental protection courts.

The reasons for separate environmental protection courts are: (1) legal complexity; (2) court environment; (3) judges' attitude; (4) accessibility; (5) power to award both pecuniary and non-pecuniary compensation to the victims and restoration of natural preservation; (6) jury system; (7) criteria to be followed in case of adjudication, and interim orders; (8) spot visits; (9) time limits to dispose of the case; (10) contempt of court order in case of non-implementation of order; (11) monitoring of implementation of the order; (12) awards at ex ante perspectives; and (13) interlinking the courts and the PCBs to ensure efficient and effective environmental protection.

Thus, the environmental protection courts shall possess all the powers and technical staff required for improving environmental quality in the country.

Contempt of court order: The study indicates that the courts are reluctant to issue a contempt notice to the authorities who have not implemented its judgments. However, at times the court issues contempt notices but revokes them because they are satisfied with the reply (which specify reasons such as monetary problem, lack of sufficient manpower, frequent transfer of the concerned authorities, etc) of the authorities. This may provide incentive to the authorities to delay the process of implementation of judgments. Moreover, the court may impose a fine on the

government for not implementing its order. For example, in the Delhi Transportation case the SC directed the Delhi state government to pay a fine of Rs 25 crore for non-implementation of its order. The focus should be on recovering costs from the concerned authorities who were responsible for not implementing the court order, and violation of rules and regulations, which is the cause of further environmental degradation.

Delays in the system: The courts in general are unable to dispose of cases quickly. It may further aggravate the damage caused by environmental pollution in the country. The study indicates that the courts on average are unable to dispose of 71 per cent of the total cases within 180 days. In addition, they took more than four years to dispose of 31 per cent of the total cases. Thus, there is a need for the court to adopt workable time limits and procedures for quick disposal in order to improve environmental quality in the country.

Accountability issues: Accountability of the functionaries of the Constitution of India is generally based on the principle of safeguarding the interests of citizens and incorporation of trust among the public on the functioning of the government. The provisions of the Constitution balance power between the legislature, the executive, and the judiciary in order to ensure good governance. For example, whenever the actions or inaction of the state infringes on the rights of the public, by receiving an application, the judiciary needs to safeguard the interests of the public at large. However, due to various reasons the legislature and the executive work closely. For instance, the rules and regulations are drafted and implemented by the executives but enacted by the legislatures. Moreover, the success or failure of the government in providing good governance to citizens is largely based on the actions and inaction of the legislature and executive. The role of the judiciary becomes important in litigation filed by citizens, when there is dissatisfaction about the law. Otherwise, the judiciary has no role to play except when the government seeks legal opinion.

The experience of the functioning of the executive, legislature and judiciary reveals that the system in the country works mostly to the advantage of the mighty, wealthy and powerful citizens at the cost of public at large. Therefore, a citizen of India is unable to utilise the privileges (rights and obligations) guaranteed under the Constitution. The institutions that were established to serve the citizens of India are becoming the master of the citizens. Thus, there is a need for a review of the working of the system in its totality and tune the system in such a way that it helps the public at large. The establishment of an apex body is one of the solutions. There is a need for an apex body, which should consist of citizens belonging to the legislature, executive and judiciary, under the provisions of the Constitution to protect the interests of the public in India. It should assess and manage the risk of environmental degradation in the spirit of public interest.

V
Summary and Conclusion

The study is on the evaluation of the functioning of the courts with the purpose of finding out whether the liability system is really effective in protecting and improving environmental quality in India. Since courts are unable to provide adequate redressal, under the general practice, to the citizens because of legal delays, higher litigation costs, and complicated legal procedure, the courts needed to adopt the concept of PIL.

The establishment of PIL is intended to safeguard the citizens against infringement of their rights. The procedural law may not strictly apply if a case is filed in the interests of the public at large. The adversarial effects of environmental pollution on the flora and fauna, and prevalence of rational apathy among victims stressed the importance of PIL in order to get redressal through the liability system under the provisions of the Constitution and within the scope of existing legislation(s). In addition, the provisions of PIL such as negligible or no court fee, relaxation of the locus standi, and availability of legal aid, provides incentives to public-spirited individuals to approach the liability system against the tortfeasor to protect and promote the environment in the country.

The study mainly focused on data collected from selected courts and also on complainants' views. From the collected data, an attempt is made to determine: (1) what categories of cases are filed; (2) what is the pending rate of cases; (3) what percentages of cases have been disposed of in favour of complainants; and (4) how much time is taken by the courts to dispose of the case. Interestingly, the study shows that the majority of cases filed in the courts pertaint to air and water pollution. The cases pending rate is very high in the apex court compared with the HC of AP. The cases settled in favour of complainants are low in the apex court than in the HC of AP. The courts, on average, were unable to dispose of 72 per cent of the total cases within 180 days, which necessitates the adoption of a workable time-bound programme in order to endure quick disposal of environmental pollution cases.

Complainants' views were gathered by questionnaire schedule in order to obtain information on their experiences of the functioning of the courts. For this data, multiple regression analysis was used to test the hypothesis: 'Environmental Quality Improvement through Liability System is not influenced by other determinants (EQILS)'. The results of the regression analysis reveal variables such as, implementation of the courts order (IMPOR), time taken by the court to dispose the case (TTCDC), spot visit to the pollution site by the judges (SPOTV), and the complainant claim over the court award (CLOAW) are significant. The other variables however, do not show any significant influence on EQILS. So, it states that the environmental quality will improve through a liability system when there is a strict implementation of the court order. Similarly, there is concern about the time element too. The courts shall dispose of the environmental cases within a workable time limit in order to prevent further degradation of the environment in the country. Hence, it empirically proves that the judges' spot visit to the pollution site will enhance the improvement of environmental quality. It is also revealing that the pronouncement of remedial awards by the courts will lead to environmental quality improvement in the country.

The inferences drawn from the empirical work can be analysed in the light of the theory of the liability system. The analysis reveals that the courts are unable to provide incentives to the tortfeasor because of informational disadvantage in the case of scientific knowledge, legal delay, lack of monitoring in the case of implementation of its orders, etc. Thus, there is a need to introduce policies on a workable time-bound programme, monitoring of its orders, judges' spot visit to the polluted areas, introduction of legal aid accountability, strict use of contempt of court order against non-implementation of orders, establishment of environmental protection courts and creation of an apex body which shall consist of executives, judiciary and the legislature in order to assess and manage risk in the interests of the public at large.

Overall, the study emphasises the necessity of improving the functioning of the liability system by making necessary changes not only in the substance of the law, but also in the working

conditions of the courts to protect and improve environmental quality in India. EPW

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Notes

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1 For example, when no case is being filed.
2 The review of the theory of liability versus regulation is based on the works of S Shavell, S Rose-Ackerman, D D Friedman, H B Schäfer and Claus Ott, A I Ogus, R A Cooter and T S Ulen, C D Kolstand, R Ellikson, G V Johnson, and P M Prasad.
3 Under the provisions of the Articles 251 and 254.
4 For example, The Water (Prevention and Control of Pollution) Act, 1974 was enacted by parliament after consent resolutions were passed by 12 state legislatures.
5 It states that "The state shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country".
6 This article imposes a responsibility on every citizen "to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures".
7 It (read with entry 13 of the union list) provides power to the centre to make laws implementing India's international obligations and also any decision made at international conference.
8 The Bhopal disaster of December 3, 1984.
9 It also has an advisory role when it advises the president of India whenever a reference is made to the court by him.
10 It is under Article 32 of the Constitution that the court derives its original jurisdiction.
11 (1976) 3 SCC 832: AIR 1976 SC 1455.
12 (1981) 2 SCR 52: AIR 1981 SC 344.
13 AIR 1982 SC 149.
14 We restrict our study to PIL cases because the private suits against environmental pollution are negligible, and it is very difficult to access the data on private suits.
15 The complainants may withdraw the cases either because of some threat from the opposite party or there may be a nexus between the parties' lawyers.
16 A total of 259 cases were filed in the AP high court and, of these, 196 were disposed of. We take random sample of 49 of the 196 cases disposed of and determine the time taken to decide these cases. We then extrapolate these results to the total number of cases filed.
17 A total of 58 cases were filed in the Supreme Court and, of these, 36 were disposed of. We take a random sample of 18 cases of the 36 disposed of and determine the time taken to decide these cases. We then extrapolate these results to the total number of cases filed.
18 It can be argued that the problems of pollution were created, in the first place, by the lack of regulatory oversight by the PCB. It is ironic that the high court primarily relies on the affidavits of the same PCB officials who did not implement the environmental laws.
19 The purpose of this exercise is to normalise the award of damages. Thus, if a petitioner claimed remedy worth Rs 100 and the court awarded only Rs 50 as damages, we can calculate the claim of award as 50 per cent. On the other hand, if the complainant claimed Rs 10,00,000 in damages but was awarded only Rs 2,000 then the relevant per cent for EQLIS is 2,000/10,00,000.
20 In order to gain information on: (1) case number; (2) the date of the cases filed and disposed; (3) addresses of both the parties; (4) whether the case was disposed/dismissed; (5) counsel for both the parties; (6) nature of claim; (7) information on interlocutory application (I A); (8) reports of expert agencies/ institutions; (9) judgment.
21 Vellore Citizens Welfare Forum vs Union of India and others, (W P No 914/1991 in the SC).
22 The Pollution Sufferers Welfare Association vs Government of Andhra Pradesh and others, (W P No 21678/1997 in the HC of AP).
23 The zinc industry is among the 17 categorised as highly polluting potential industries notified by the MoEF.
24 Mulagada, Chinamulagada, Chukkavanipalem, Yeduruvanipalem, having a population of 5,000 people, cultivable land of 1,000 acres, and about 3,000 livestock.
25 The city has been identified as one of the 14 problem areas in the country by the CPCB.
26 There is no representation from the victims.
27 Such as mental disorder, pregnancy wastage, etc, which led to the children of the villagers performing poorly in education making them ineligible for white-collar jobs.
28 If the litigation is against the government, the concerned authorities try to distance the litigant from the government sponsored activities If the litigation is against the private corporate sector, the litigant even receives threats to life. The litigation may damage the social relations of the litigant and there may even be some implications on personal development; The litigant will not get accessibility and cooperation from the concerned authority and institutions; there may be high opportunity cost to the litigant in terms of time, money, and energy; and there may be a lot of pain and sufferings, etc.
29 Hari Ram Patidar vs Union of India and others, (in the SC, W P No 330/1995). The opposite party may deal with the court in a planned manner. For example, delay tactics, purchase of witnesses and complainant's lawyer, influence of experts in order to hid factual information, go for interim orders and appeals, trying to obey the court order but in reality violating it, bribe the implementing agency, etc.
30 V Balakrishna Sarma vs Government of Andhra Pradesh and others, (W P No 26595/1998, in the HC of AP).
31 B L Wadehra vs Union of India and others, (W P No 286/1994 in the SC).
32 It consists of both bio and non-bio disposal, such as plastic syringes.
33 It is regulated by Sections 94 and 95, as well as Order 39 of the Code of Civil Procedure of 1908. The grant or refusal depends on the existence of a prima facie case, the likelihood of irreparable injury if the order is refused, and that the balance of convenience requires the issue of the order.
34 It is regulated by Sections 37 to 42 of the Specific Relief Act of 1963. It permanently restrains the defendant from doing the act complained of. In other words, it is intended to protect the plaintiff indefinitely.
35 K Sai Vijayendra Singh vs Andhra Pradesh State Pollution Control Board (W P No 28363/1997, in the HC of AP).
36 Vellore Citizens Welfare Forum vs Union of India & others, (W P No 914/1991, in the SC).
37 Sreeram Ananda Rao vs Andhra Pradesh State Electricity Board and others, (W P No 11322/1997, in the HC of AP).
38 The project initially consists of the tail race tunnel (TRT), about 2.3 km length, power house, 230m length and 16.2m width, surge cavel 186. 6m length and 24. 5m width, and draft tubes 110m length and six faces, etc.
39 B Gurava Reddy vs Union of India and others, (W P No 3476/1990 in the HC of AP).
40 The heated cement dust of the industry affects cotton yield, which fell from 15 quintals to 6 quintals per acre; there is a fall in selling price too, from Rs 2,000 to Rs 1,500 per quintal. Moreover, the agricultural labourers are unwilling to work in the farmland adjacent to the industry because of the dust.

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Climate Change Adaptation, Policies, and Measures in India

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INTRODUCTION

The Earth's climate has changed and will continue to change in the foreseeable future, which consequently will bring impacts and implications for development and growth. On a global scale, the Earth's climate has warmed, precipitation patterns have changed, sea levels have risen, and most non-polar mountain glaciers are in retreat.[1] Climate projections for India suggest that impacts of climate change in India are likely to be varied, with some regions experiencing intense rainfall, flood, and storm risks,[2] while other regions will encounter sparser rainfall and prolonged droughts.[3] The impacts of climate change are likely to affect food production, water supply, coastal settlements and deltas, forest and mountain ecosystems, health, and energy security.[4] India's rainfall patterns are particularly important because of the vast number of Indians who depend on rain-fed agriculture.[5] Rising sea levels also pose a risk to coastal and fishing communities and river deltas.[6]

Adaptation is particularly important in India because, as in most developing countries, the adaptive capacity of Indian communities likely to be impacted by climate change is low.[7] On November 28, 2009 at an international meeting on

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1. John P. Holdren, *Introduction, in* CLIMATE CHANGE SCIENCE AND POLICY 1, 1-3 .

2. Jayant Sathaye et al., *Climate Change, Sustainable Development, and India: Global and National Concerns*, 90 CURRENT SCI. 314, 318–19 (2006).

3. Ashok Gadgil & Sharachchandra Lélé, *India, in* CLIMATE CHANGE SCIENCE AND POLICY 323, 325 (Stephen Schneider et al. eds., 2001).

4. Intergovernmental Panel on Climate Change [IPCC], Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, *Climate Change 2007: Impacts, Adaptation and Vulnerability, Summary for Policymakers*, at 11–12, 18 (2007), *available at* http://www.ipcc.ch/ipccreports/ar4-wg2.htm [hereinafter IPCC-AR4].

5. Jyoti K. Parikh & Kirit Parikh, Organisation for Economic Co-operation and Development [OECD], *Climate Change: India's Perceptions, Positions, Policies and Possibilities*, at 6 (2002), *available at* http://www.oecd.org/dataoecd/22/16/1934784.pdf.

6. IPCC-AR4, *supra* note 4, at 9.

7. Sathaye, *supra* note 2, at 318.

climate change, Indian Prime Minister Manmohan Singh stated publicly that, to effectively address the impacts of climate change in India, balance and equal priority must be given to mitigation, adaptation, finance, and technological innovation.[8] "Mitigation . . . cannot take precedence over adaptation which for many countries . . . poses a greater challenge."[9] For this reason, organizations such as the United Nations Framework Convention on Climate Change ("UNFCCC") and the Intergovernmental Panel on Climate Change ("IPCC") have written several reports that help national governments assess vulnerability and design suitable adaptation measures.

India's National Action Plan on Climate Change ("NAPCC"), released in June 2008, outlines India's strategy to meet the challenge of climate change.[10] The focus of the NAPCC, however, has been on adopting mitigation measures by switching to "clean and green" technologies for development purposes, with an emphasis on maintaining a high growth rate.[11] The NAPCC does not adequately address the adaptation measures that Prime Minister Singh emphasized. It merely mentions some existing measures that could potentially double as adaptation measures,[12] which barely begins to address the problem.

ADAPTATION IS URGENT

Adaptation is necessary to address the impacts of climate change because there are some impacts for which adaptation is the only available and appropriate response.[13] Adaptation coupled with mitigation is recognized as one of the ways of achieving sustainable development, which improves the economic condition of the poor, who are most vulnerable to climate change.[14] The National Communications Guidelines of the United Nations Framework Convention on Climate Change ("UNFCCC") list ten conditions to determine the vulnerability of a country to climate change.[15] India, with its highly diverse climatic regimes, meets six of these conditions,[16] indicating the need to incorporate adaptive measures into India's development programs.

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8. Malini Parthasarthy, *India for Emission Cut Target with Equitable Burden-Sharing*, THE HINDU, Nov. 29, 2009, *available at* http://www.hindu.com/2009/11/29/stories/2009112958120100.htm.

9. *Id.*

10. Press Release, Ministry of Environment and Forests, Government of India, Impact of Climate Change and National Action Plan on Climate Change (Oct. 22, 2008), *available at* http://www.pib.nic.in/release/rel_print_page1.asp?relid=44098.

11. *See* GOVERNMENT OF INDIA PRIME MINISTER'S COUNCIL ON CLIMATE CHANGE, NATIONAL ACTION PLAN ON CLIMATE CHANGE (NAPCC) 13 (2008), *available at* http://pmindia.nic.in/climate_change.htm.

12. *Id.* at 17–18.

13. IPCC-AR4, *supra* note 4, at 19.

14. *Id.* at 20.

15. RAVI SHARMA, *India: Status of National Communications to the UNFCCC*, *in* ASIA: LOOKING AHEAD 71, 73 (2000), *available at* http://www.whrc.org/policy/climate_change/ALApdf/ALA-08-INDIA.pdf.

16. *Id.*

Further evidence from the IPCC demonstrates the urgent need for India to adopt adaptive strategies. The fourth assessment report of the IPCC listed changes in natural and human systems that have taken place and may be attributed to climate change.[17] Those changes relevant to India include:

- enlargement and increasing number of glacial lakes;
- increasing ground instability in permafrost regions and rock avalanches in mountain regions;
- increasing runoff and earlier spring peak discharge in many glacier- and snow-fed rivers;
- warming of lakes and rivers in many regions, with effects on thermal structure and water quality; and
- earlier timing of spring events, such as leaf-unfolding, bird migration, and egg-laying.[18]

These changes in the natural and human systems could have a negative impact in India. Researchers have shown that the widespread retreat of glaciers and icecaps and higher land and sea surface temperatures will lead to water stress,[19] which is likely to have a negative effect on ecosystems, crop production, fisheries, and human health.[20] The need for adaptation is urgent..I

INCREASING ADAPTIVE CAPACITY

Adaptive capacity, according to one set of experts, is "the ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with consequences."[21] For adaptation policies to be effective, India must determine how best to strengthen its adaptive capacity by looking at the following factors:

i. ***Reducing poverty and improving economic conditions:*** It is widely accepted that the economic condition of a nation or community is an important determinant of adaptive capacity.[22] Though not synonymous, poverty is considered a rough indicator of the ability to cope with disasters.[23] Hence,

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17. IPCC-AR4, *supra* note 4, at 8.

18. *Id.* at 13.

19. Sathaye, *supra* note 2, at 316.

20. *Id.* at 316.

21. THE ENERGY AND RESOURCES INSTITUTE, COPING WITH GLOBAL CHANGE: VULNERABILITY AND ADAPTATION IN INDIAN AGRICULTURE 7 (TERI 2003), *available at* http://www.iisd.org/pdf/2004/climate_coping_global_change.pdf.

22. Intergovernmental Panel on Climate Change [IPCC], Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change, *Climate Change 2001: Impacts, Adaptation and Vulnerability*, at 895 (2001), *available at* http://www1.ipcc.ch/ipccreports/tar/wg2/index.htm [hereinafter IPCC-AR3].

23. *Id.* at 895.

improving the economic condition of the poor is a necessary measure to be able to increase a country's adaptive capacity. [24]

ii. ***Improving availability and access to technology:*** Technologies open up the number of options for adaptation.[25] Many proposed adaptation measures such as warning systems, protective structures, crop breeding and irrigation, relocation of human settlements, and flood control measures involve technology.[26]

iii. ***Increasing levels of knowledge and providing access to information:*** Knowledge about climate change and access to information increases the preparedness of a community/nation for impending disasters.[27] Thus, choosing the best-suited adaptation method involves recognizing the need to adapt and identifying the available options. It is necessary to provide access to information not only to decision-makers, but also to vulnerable communities.[28]

iv. ***Role of institutions:*** Well-developed institutions facilitate adaptation. Governing bodies, research institutions, and civil societies play an important role in formulating policies on management of resources, developing adaptation strategies, and disseminating information on climate change.[29] Hence, it is important to provide support to social institutions and involve them in the decision-making process.[30]

v. ***Promoting equity:*** Another key indicator of adaptive capacity is the equity in allocation of resources and access to information across age, gender, ethnicity, and educational attainment.[31] Marginalization renders communities or even sections of a population vulnerable because of their inability to access information or resources.[32] Thus, it is important to ensure that all sections of the population are equitably adapted to the effects of climate change.[33]

THE CURRENT STATE OF ADAPTATION IN INDIA

The NAPCC and the Ministry of Environment and Forests ("MoEF") are the two primary outlets for adaption policies in India. The NAPCC, prepared by the Prime Minister's Council on Climate Change, was released in June 2008.[34]

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24. *See* Emmanuel Skoufias, *Economic Crises and Natural Disasters: Coping Strategies and Policy Implications*, 31 WORLD DEVELOPMENT 1087, 1087 (2003).

25. IPCC-AR3, *supra* note 22, at 896.

26. *Id.*

27. *Id.*

28. *See id.*

29. *See id.*

30. *Id.* at 896–97.

31. *Id* at 897.

32. *See id.*

33. *Id.*

34. Press Release, Ministry of Earth Science, Lok Sabha (Nov. 25, 2009), *available at* http://www.pib.nic.in/release/release.asp?relid=54607.

Principles of the NAPCC include equitable growth and sustainable development using appropriate technologies for mitigation and adaptation, collaboration with various institutions for implementation of programs, and welcoming international cooperation in knowledge sharing.[35] Through eight "National Missions"[36] the NAPCC aims to promote development and maintain a high growth rate without compromising on adaptation and mitigation.[37] However, there is no National Mission for adapting to the impacts of climate change, though some elements of adaptation will be addressed in the context of the existing National Missions.

In August 2009, the MoEF released a compilation of India's submissions made to the UNFCC, with particular attention paid to the climate change negotiations in 2008 and 2009.[38] This document did mention a need to address adaptation with the same level of importance and urgency as mitigation.[39] It also recognized the need for a comprehensive and flexible framework to address the different aspects of adaptation.[40] Such a framework would lead to the formulation and implementation of adaptation plans, build resilience, and reduce and manage risks with appropriate financial and technological support.[41]

The following section reviews the steps enumerated by the Indian government, via the NAPCC and the MoEF, to tackle adaptation in light of the vulnerability of different sectors and the adaptation measures suggested by various organizations and the scientific community.

A. WATER

Currently in India, there has been an increase in extreme rains in the northwest and a decrease in rainy days along the east coast.[42] The hydrological cycle is likely to be altered, and a general reduction in the quantity of available run-off because of shorter and more intense monsoons is predicted.[43] The melting of glaciers and glacial run-offs can create landslides, soil erosion, and flooding.[44] An increase in extreme events such as droughts and floods is projected.[45]

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35. NAPCC, *supra* note 11, at 2.

36. *Id.* at 2–5 (The National Missions include: National Solar Mission; National Mission for Enhanced Energy Efficiency; National Mission on Sustainable Habitat; National Water Mission; National Mission for Sustaining the Himalayan Ecosystem; National Mission for a Green India; National Mission for Sustainable Agriculture; and National Mission on Strategic Knowledge for Climate Change).

37. *Id* at 1–2.

38. MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA, CLIMATE CHANGE NEGOTIATIONS: INDIA'S SUBMISSIONS TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (2009).

39. *Id.* at 27.

40. *Id.* at 28.

41. *Id.*

42. IPCC-AR4, *supra* note 4, at 475..

43. Sathaye, *supra* note 2, at 318.

44. IPCC-AR4, *supra* note 4, at 9, 17.

45. *Id.* at 12.

Groundwater, which constitutes over eighty-five percent of rural and over fifty percent of urban and industrial water sources, will be affected due to increased run-off and seawater ingression.[46] Freshwater resources are already stressed in many parts of India,[47] and climate change will only exacerbate the situation.[48] The gross per capita water availability in India is projected to decline from approximately 1820 cubic meter/yr in 2001 to as low as approximatley 1140 cubic meter/yr in 2050.[49]

Measures to conserve freshwater resources include change in land-use and cropping patterns, conjunctive use of freshwater, reuse of waste water, improved efficiency of irrigation systems and development of a flood control and management system.[50] Reviving traditional water harvesting systems, promoting rainwater harvesting, and greatly improving the existing water storage infrastructure have also been suggested.[51]

The NAPCC promotes non-conventional methods of water use, including inter-basin transfer of water, artificial recharge of groundwater, and desalination of brackish water.[52] It also envisages water conservation through traditional rainwater harvesting to increase the supply of freshwater.[53] However, inter-basin transfer of water is energy and resource intensive and therefore might have serious consequences on the riparian ecology and cause large-scale disruptions to the communities directly depending on the rivers.[54] Accordingly, the Indian government should consider viable and tested options to address the shortage of freshwater instead of spending heavily on large infrastructure projects.

The water conservation steps under the NAPCC's "National Water Mission," if implemented, could go a long way in helping communities adapt to the changing climate.[55]

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46. HIMANSHU THAKKAR, THERE IS LITTLE HOPE HERE: INDIA'S NATIONAL ACTION PLAIN ON CLIMATE CHANGE, A CIVIL SOCIETY VIEW 19 (2009), *available at* http://www.indiaenvironmentportal.org.in/content/there-little-hope-here-indias-national-action-plan-climate-change-a-civil-society-view.

47. Sathaye, *supra* note 2, at 319; Payal Sampat, *What Does India Want?,* WORLD WATCH MAGAZINE, June 15, 1998, at 32–33.

48. *See* United Nations Framework Convention on Climate Change [UNFCCC], *Climate Change: Impacts, Vulnerabilities and Adaptation in Developing Countries*, at 20 (2007), *available at* http://unfccc.int/resource/docs/publications/impacts.pdf.

49. IPCC-AR4, *supra* note 4, at 481.

50. *See* A. K. Gosain & Sandhya Rao, *Impacts of Climate Change on Water Sector, in* CLIMATE CHANGE AND INDIA: VULNERABILITY ASSESSMENT AND ADAPTATION, 159, 188–91 (P.R. Shukla et al. eds., 2003).

51. THAKKAR, *supra* note 46, at 29; *see generally*, Michael Specter, *The Last Drop*, NEW YORKER, Oct. 23, 2006, at 60.

52. NAPCC, *supra* note 11, at 18.

53. *Id.*

54. Imran Ali, *Interlinking of Indian Rivers*, 86 CURRENT SCI. 498, 498–99 (2004), *available at* http://www.ias.ac.in/currsci/feb252004/498.pdf.

55. THAKKAR, *supra* note 46, at 29 (recommending conservation steps that are incorporated in NAPCC); NAPCC, *supra* note 11, at 32–33.

B. AGRICULTURE

In addition to the water sector, the agricultural sector is likely to be sensitive to climate change.[56] According to the Indian agricultural scientist, M. S. Swaminathan, "just a one-degree rise in global average temperatures would mean an annual loss of six to seven million tonnes, or 10 per cent, of India's wheat production."[57] Studies have indicated a decrease in crop yields in many parts of India due to an increase in temperature, a decrease in growing season,[58] frequent floods, drought, increase in soil salinity, soil degradation,[59] and an increase of pests and pathogens.[60] Effects on agriculture have a direct bearing not only on the economy, but also on food security.[61]

Current agriculture adaptation strategies include developing and promoting drought-resistant, pest-resistant, and salt-tolerant crops; moderating the use of fertilizers and pesticides; improving irrigation systems; and developing farm-level adaptive management tools.[62] Enhancing the adaptive capacity of subsistence farming/herding communities through education and access to climate change-related information;[63] improving short-term forecasting tools,[64] promoting crop switching where necessary, and establishing seed banks to encourage diversification of crops[65] also has been suggested.

The NAPCC's "National Mission for Sustainable Agriculture" and the "National Mission on Strategic Knowledge"[66] suggest that other adaptation measures could include increasing agricultural production, changing land use and management, increasing income from agricultural enterprises, improving risk management through early warning systems, obtaining crop insurance, and recycling wastewater and manure in agriculture.[67] These "National Missions" seek to promote dry-land agriculture and biotechnology, strengthen insurance mechanisms, develop relevant regional databases, and provide farmers with access to

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56. IPCC-AR4, *supra* note 4, at 472.

57. Priscilla Jebraj, *Like China, India Should Protect Food Security*, THE HINDU, Dec. 18, 2009, at 11, *available at* http://www.thehindu.com/2009/12/18/stories/2009121860811100.htm.

58. Sathaye, *supra* note 2, at 316.

59. IPCC-AR4, *supra* note 4, at 490.

60. Naveen Kalra et al., *Impacts of Climate Change on Agriculture*, *in* CLIMATE CHANGE AND INDIA: VULNERABILITY ASSESSMENT AND ADAPTATION 193, 216 (P.R. Shukla et al. eds., 2003).

61. *Id.* at 194.

62. IPCC-AR4, *supra* note 4, at 472.

63. *Id.*

64. Interdepartmental Working Group on Climate Change, Food and Agriculture Organization of the United Nations, *Adaptation to Climate Change in Agriculture, Forestry and Fisheries: Perspective, Framework and Priorities*, at 14–15 (2007).

65. Jebraj, *supra* note 57, at 11.

66. NAPCC, *supra* note 11, at 35–36.

67. P. K. Aggarwal, *Global Climate Change and Indian Agriculture: Impacts, Adaptation and Mitigation*, 78 INDIAN J. OF AGRICULTURAL SCI. 911, 915–17 (2008).

information.[68]

Although these recommendations are a starting point, adaptation strategies will simultaneously need to consider the changing demand of farm products because of global trade, population increases, and income growth, as well as the socio-economic and environmental consequences of various adaptation options.

C. NATURAL ECOSYSTEMS AND BIODIVERSITY

It is estimated that up to seventy percent of India's natural vegetation is vulnerable to the adverse effects of climate change, resulting in major changes in the structure and composition of species.[69] There are also indications that the forests of northwest India are changing into wetter forest types and that the forests of the northeast are getting drier.[70] The vulnerability of vegetation is enhanced by land fragmentation, crop and forest monoculture, and unsustainable extraction of resources.[71] Climate change could lead to local extinctions, which could have negative effects not only on other resources such as water and soil, but also on the communities that are dependent on forest ecosystems for their livelihood.[72]

Preservation strategies include in-site conservation of forests, promoting natural regeneration of degraded forests, creating wildlife corridors, preventing fires, adopting sustainable harvesting practices, and building the capacity of research institutions, NGOs, forest dependent communities, and even the state and central forest authorities.[73]

Most of the recommendations have been incorporated under the "National Mission" for a "Green India" of the NAPCC.[74] Some of the initiatives envisaged include promoting silvicultural practices for fast-growing and climate-hardy tree species and enhancing public and private investments for raising plantations to increase the cover and density of forests.[75] The Cabinet has allocated a significant amount of money by Indian standards (1.85 billion USD) to various forestry schemes.[76] In the recent past, monoculture plantations have degraded forests, grasslands, and deserts, disturbing some species and even leading to local species

68. NAPCC, *supra* note 11, at 35–36

69. N. H. Ravindranath et al., *Vulnerability and Adaptation to Climate Change in the Forest Sector, in* CLIMATE CHANGE AND INDIA: VULNERABILITY ASSESSMENT AND ADAPTATION 227, 253 (P.R. Shukla et al. eds., 2003).

70. Sathaye, *supra* note 2, at 319.

71. Ravindranath, *supra* note 69, at 257.

72. *Id.* at 233, 239.

73. *Id.*

74. NAPCC, *supra* note 11, at 34–35.

75. *Id.* at 34.

76. MINISTRY OF ENVIRONMENT AND FORESTS, GOVERNMENT OF INDIA, INDIA: TAKING ON CLIMATE CHANGE - TWENTY RECENT INITIATIVES RELATED TO CLIMATE CHANGE 2 (2009), *available at* http://www.indiaenvironment-portal.org.in/content/india-taking-climate-change-twenty-recent-initiatives-related-climate-change.

extinctions.[77]

The Indian Government should be cautious before undertaking large-scale plantations, as it may jeopardize long-term conservation and may add to the vulnerability of certain ecosystems. The NAPCC makes no mention of involving research institutions and civil society organizations. Broad consultation with research institutions and NGOs is likely to help the government hone its adaptation strategies.

D. MARINE AND COASTAL ECOSYSTEMS

Both increases in sea level and extreme weather events are ominous for India. IPCC's fourth assessment report states that "[t]he projected future sea-level rise could inundate low lying areas, drown coastal marshes and wetlands, erode beaches, exacerbate flooding and increase the salinity of rivers, bays and aquifers."[78]

Sea-level rise is projected to displace populations in coastal zones, increase flooding in low-lying coastal areas, and lower crop yields because of inundation and salinization.[79] Even under the most conservative scenario, sea level will be about forty centimeters higher by the end of the twenty-first century than it is today.[80] Damage from flooding could be very high because of inadequate flood protection measures.[81] For example, mangrove forests in India, which thrive on brackish water, are likely to be increasingly threatened.[82] Mangroves could be affected both by sea-level rise and by an increased pulse of freshwater from increased river run-off.[83] The impact of sea-level rise on mangroves depends mostly on tidal range and sediment supply.[84] Coral reefs are also threatened; an increase in sea-surface temperature (SST) can result in coral bleaching.[85] *El niño* in 1998 dramatically increased SST, which led to mass bleaching of corals.[86] Though bleaching is reversible in some cases, prolonged increase in SST and intense bleaching can cause the death of corals.[87]

The IPCC has suggested protection, accommodation, and retreat as three

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77. S. R. Hiremath & P.G. Dandavatimath, *Eucalypt Plantations and Social and Economic Aspects in India, in* REPORTS SUBMITTED TO THE REGIONAL EXPERT CONSULTATION ON EUCALYPTUS - VOLUME II, (M. Kashio K. White ed.,1996), *available at* http://www.fao.org/DOCREP/005/AC772E/AC772E00.HTM (follow "Eucalypt Plantations and Social and Economic Aspects in India" hyperlink).

78. IPCC-AR4, *supra* note 4, at 485.

79. Sathaye, *supra* note 2, at 319.

80. IPCC-AR4, *supra* note 4, at 484.

81. *Id.* at 485.

82. *Id.* at 481, 485.

83. R. Sukumar et al., *Climate Change Impacts on Natural Ecosystems, in* CLIMATE CHANGE AND INDIA: VULNERABILITY ASSESSMENT AND ADAPTATION 266, 273 (P.R. Shukla et al. eds., 2003).

84. *Id.* at 274.

85. *Id.* at 275.

86. *Id.* at 276.

87. *Id.*

possible strategies to combat destruction of the marine environments.[88] Together with effective implementation of India's Integrated Zone Management Plan, building coastal protection structures for large and sometimes unprecedented storm surges, building new constructions at higher elevations, and heightening and strengthening dikes are measures also commonly suggested.[89] In India, construction of protective structures such as dikes has drawn much opposition, as it causes erosion of beaches on one side of the structures and accretion of sand on the other side.[90] Construction of dikes also affects the livelihood of fisher-folk and agricultural communities along the coast.[91] It has been suggested that coastal shelter beds consisting of mangroves along estuaries and backwaters and sand dune vegetation along sandy beaches could protect the coast.[92]

Adaptation would necessarily include providing strong infrastructure, communication and transport systems, and a social support system to increase the adaptive capacity of vulnerable communities. Adaptation also needs to be included in coastal zone management and disaster mitigation programs as well as land-use planning and sustainable development strategies. Enhancing resilience by improving the technical, institutional, economic, and cultural capability to cope with impacts would also be an appropriate adaptive strategy.[93]

Although coasts and marine ecosystems are highly vulnerable sectors, the NAPCC has no concrete plans for adaptation in these areas. An adaptation plan is that considers the economic importance of the coast and the vast number of people living there is desperately needed.

E. HUMAN HEALTH

Climate change is likely to cause an increase in diarrhea and malnutrition, both of which are already serious problems in India.[94] As the temperature warms, hillsides and uplands become hospitable to mosquitoes. Vector (insect)-borne infectious diseases strongly impacted by climate change include malaria, schistosomiasis, dengue fever, and other viral diseases.[95] An increase in sea surface temperature leading to phytoplankton bloom may also cause the spread of cholera.[96] In addition, malaria is likely to persist, and new regions may become malaria-prone.[97] Because of increased rainfall and temperature variability, the

88. IPCC-AR4, *supra* note 4, at 491.

89. *Id.* at 491.

90. Sudarshan Rodriguez et al., United Nations Development Programme [UNDP], Ashoka Trust for Research in Ecology and the Environment [ATREE], *Policy Brief: Seawalls*, at 1 (2008).

91. *Id.* at 3.

92. Sukumar et al., *supra* note 82, at 286.

93. IPCC-AR3, *supra* note 22, at 900.

94. IPCC-AR4, *supra* note 4, at 487.

95. *Id.* at 487.

96. *Id.* at 487.

97. Sathaye, *supra* note 2, at 319.

duration of the malaria transmission window is likely to widen in northern and western states and narrow in southern states.[98]

Adaptation measures include public education, surveillance and monitoring of vectors and intermediate hosts, ecosystem interventions, infrastructure development, epidemic preparedness, research and development of predictive models, and medical interventions.[99] An "Integrated Environment Management Approach" is needed that allows collaboration of climate experts, sociologists, economists, hydrologists, and agricultural scientists to identify and eradicate new ecological niches that may sustain vectors due to climate change.[100] To develop an effective adaptation strategy, the effects of weather on diseases and pathogens needs to be understood, something that is only possible with the implementation of a disease monitoring system.[101] An adaptive strategy would also require rebuilding the public health infrastructure in places where it has deteriorated.[102]

Apart from existing programs for surveillance and control of vector-borne diseases and the provision of emergency medical relief in the case of natural calamities,[103] India, via the NAPCC, has no concrete plans for an effective adaptation program to combat climate-related health issues.

F. DISASTER MANAGEMENT

With an increase in natural disasters due to climate change, such as floods and drought, it is imperative to have disaster management strategies in place.[104] Disaster management includes interventions such as insurance, early-warning systems, local village-level responses, and large-scale infrastructure, which are necessary to save livelihoods, housing, and the infrastructure of vulnerable communities.[105] These strategies should be location-specific and should include a mix of infrastructure, institutional, and financial measures rather than approaches that focus on only one element.[106] A *bottom-up* approach that involves all stakeholders in evaluating risks and weighing costs and benefits openly and transparently is considered fundamental to disaster risk management.[107]

The NAPCC has mentioned all of these components as part of the disaster

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98. *Id.*

99. AP Mitra et al., *Impact of Climate Change on Health: A Case Study of Malaria in India, in* CLIMATE CHANGE AND INDIA: VULNERABILITY ASSESSMENT AND ADAPTATION, 360, 382 (P.R. Shukla et al. eds., 2003).

100. *Id.* at 382.

101. IPCC-AR4, *supra* note 4, at 491.

102. IPCC-AR3, *supra* note 22, at 901.

103. NAPCC, *supra* note 11, at 18.

104. MARCUS MOENCH ET AL., CATALYZING CLIMATE CHANGE AND DISASTER RESILIENCE: PROCESS FOR IDENTIFYING TANGIBLE AND ECONOMICALLY ROBUST STRATEGIES: FINAL REPORT OF THE RISK TO RESILIENCE STUDY 3 (Inst. for Soc. and Envtl. Transition-Nepal 2009).

105. *Id* at 3.

106. *See id.* at 38.

107. *Id.* at 6.

management program.[108] The National Disaster Management Act, which was passed in 2005, is also in the process of being implemented, but it is not yet functional at the local level.[109] However, both the NAPCC and the National Disaster Management Act fail to involve stakeholders in vulnerability assessments and cost-benefit analysis.[110] Additionally, despite the existence of numerous governmental departments that deal with disaster management, the departments lack coordination.[111] India needs to incorporate the lessons it has learned from past experiences into future policies because probabilistic models are insufficient in predicting climate change impacts.[112]

G. URBAN AREAS

As climate change intensifies, urban centers also will be at risk from storms, floods, heat waves, and water shortages.[113] The urban infrastructure remains underdeveloped and excessively stressed in most cities.[114] Climate change will be a further catalyst for the ongoing agrarian crisis in rural India, causing rapid rural to urban migration that is driven by increased intensity and frequency of extreme events, such as the expansion of drought in semi-arid areas or drought and flooding in the Indo-Gangetic and coastal plains.[115] The mass migration of displaced rural population into the cities will overwhelm critical urban systems such as health, transportation, housing, energy, and water,[116] which will ultimately lead to conflicts between existing urban populations and rural migrants, particularly if employment is at issue.[117]

H. URBANIZATION AND CLIMATE CHANGE

The Asian Cities Climate Change Resilience Network ("ACCCRN")[118] sup-

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108. NAPCC, *supra* note 11, at 44.

109. MOENCH, *supra* note 104, at 295.

110. *Id.* at 311.

111. *Id.* at 293.

112. *Id* at 294.

113. Mike Shanahan, *Adaptation to climate change faces major constraints in urban areas*, INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVEOPMENT, Nov. 13, 2007, http://www.iied.org/human-settlements/media/adaptation-climate-change-faces-major-constraints-urban-areas (last visited Mar. 25, 2010).

114. NATIONAL INTELLIGENCE COUNCIL, CR 2009–07 INDIA: IMPACT OF CLIMATE CHANGE TO 2030, GEOPOLITICAL IMPLICATIONS 12 (2009).

115. David Satterthwaite et al., *Adapting to Climate Change in Urban Areas* 34 (Human Settlements Group and the Climate Change Group at the International Institute for Environment and Development (IIED) Working Paper), *available at* http://www.iied.org/pubs/pdfs/10549IIED.pdf.

116. NATIONAL INTELLIGENCE COUNCIL, *supra* note 114, at 12.

117. Asian Cities Climate Change Resilience Network (ACCCRN), The Rockefeller Foundation, http://www.rockefellerfoundation.org/what-we-do/current-work/developing-climate-change-resilience/asian-cities-climate-change-resilience (last visited Mar. 25, 2010).

118. ACCRN, spearheaded by the Rockefeller Foundation, helps cities and their citizens construct flexible and dynamic systems and institutions that identify and respond to the challenges climate change poses to urban

ports urban climate resilience[119] in four different countries, one of which is India. Its process timeline includes city scoping and selection, city-level engagement and capacity development (during 2009–2010), and implementation of urban resilience projects (during 2010–2012).[120] The ACCCRN process in India covers Gorakhpur, Surat, and Indore by collaborating with national partners, namely TARU[121] in Indore and Surat, and GEAG[122] in Gorakhpur.[123] The process includes recognizing climate change vulnerability in the cities.[124]

A second project, The Jawaharlal Nehru National Urban Renewal Mission ("JNNURM") [125] was initiated in 2005 to address infrastructure development, urban poverty, and improvements in urban governance in sixty cities by effectively implementing decentralization initiatives, as envisaged in the seventy-fourth amendment of the Indian Constitution.[126] This is to be achieved under the aegis of a National Steering Group and coordinated by State Level Steering Committees.[127]

Thus, India needs a multi-level climate adaptation framework that works at a national, state, city, and neighborhood level.[128] Such a framework should bring together public, private, and civil society sectors.[129] It should incorporate climate change risk assessment, adaptation, and mitigation measures into India's ongoing national hazard mitigation programs and build strong links with existing urban

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areas. This is achieved through collaboration among outside experts, national partners, local governments, and other organizations to confront the intricacies of climate change and develop local capacity to address specific challenges. *See id.*

119. Climate Resilience"indicates a capacity to maintain core functions in the face of hazard threats and impacts, especially for vulnerable populations. It usually requires a capacity to anticipate climate change and plan needed adaptations. An entity's resilience to climate change and variability interacts with its resilience to other dynamic pressures including economic change, conflict and violence." Satterthwaite et al., *supra* note 114, at 6.

120. ASIAN CITIES CLIMATE CHANGE RESILIENCE NETOWRK, RESPONDING TO THE URBAN CLIMATE CHALLENGE 7 (Sarah Opitz-Stapleton et al. eds., Institute for Social and Environmental Transition 2009).

121. TARU is India's leading consulting firm that specializes in development planning and implementation of multi-sector public policy. *See* TARU, http://www.taru.org (last visited Mar. 25, 2010).

122. GEAG, Gorakhpur Environmental Action Group, is a resource institution focusing on sustainable agriculture, participatory approaches, and methodologies in northern India. *See* Genesis, Gorakhpur Environmental Action Group, http://www.geagindia.org/Genesis.htm (last visited Mar. 25, 2010).

123. *Id.*

124. Adaptation and Livelihood Resilience, Gorakhpur Environmental Action Group, http://www.geagindia.org/adaptation.htm (last visited Mar. 2, 2010).

125. JNNURM is a Government of India initiative that aims to encourage cities to initiate steps to bring about improvement in the existing service levels in a financially sustainable manner. Focus is to be on efficiency in urban infrastructure and service delivery mechanisms, community participation, and accountability of Urban Local Bodies towards citizens. *See* MINISTRY OF URBAN EMPLOYMENT AND POVERTY ALLEVIATION & MINISTRY OF URBAN DEVELOPMENT, JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION 5, *available at* http://jnnurm.nic.in/nurmudweb/toolkit/Overview.pdf (last visited Mar. 25, 2010).

126. *See id.* at 4–6, 12, 14.

127. *See id.* at 15.

128. *See* Aromar Revi, *Adaptation for India's Cities*, ELDIS, http://www.eldis.org/go/home&id=47337&type=Document (last visited Mar. 25, 2010).

129. *Id.*

renewal interventions.[130]

FUNDING

Worldwide climate change adaption may require hundreds of billions of U.S. dollars each year.[131] Some of the fundraising mechanisms suggested by the UNFCC include scaling up resources; using public funds; involving the private sector in developing and implementing financial risk management mechanisms that encourage adaptation; and incorporating adaptation measures into national policies that increase adaptive capacity.[132] The UNFCC also recommends designing appropriate institutional and operational arrangements to ensure that funds reach the most vulnerable sectors of the society.[133]

Three special funds have been created to help developing countries, namely the Special Climate Change Fund ("SCCF"), the Least Developed Countries Fund ("LDCF") under the UNFCCC, and the Adaptation Fund ("AF") under the Kyoto Protocol.[134] Article 11.5 of the UNFCCC states that the developed country parties may provide for use by developing countries financial resources related to the implementation of the Convention through bilateral, regional, and other multilateral channels.[135] Accordingly, the developed countries have established financial institutions and development cooperation agencies.[136] Apart from this, several other funding sources are available for adaptation. These include funds created by international foundations, NGOs, private institutions, bilateral and multilateral banks, and UN organizations.[137] Some funding also comes from the Global Environment Facility,[138] which has approved the financing of at least

130. *Id.*

131. United Nations Framework Convention on Climate Change [UNFCCC], *Investment and Financial Flows to Address Climate Change: An Update*, 4, U.N. Doc No. FCCC/TP/2008/7 (Nov. 26, 2008).

132. *Id.* at 5.

133. *Id.*

134. *See* United Nations Framework Convention on Climate Change, Financial Mechanism, http://unfccc.int/cooperation_and_support/financial_mechanism/items/2807.php (last visited Mar. 25, 2010).

135. *See* United Nations Framework Convention on Climate Change, Multilateral and Bilateral Funding Sources, http://unfccc.int/cooperation_and_support/financial_mechanism/bilateral_and_multilateral_funding/items/2822.php (last visited Mar. 25, 2010).

136. *See id.* (listing multilateral financial institutions).

137. *See* United Nations Framework Convention on Climate Change, Funding for Adaptation, http://unfccc.int/adaptation/implementing_adaptation/adaptation_funding_interface/items/4638.php (last visited Mar. 25, 2010) (UNFCC's adaptation funding interface provides a platform to access and screen funding options available for adaptation).

138. *See* Global Environmental Facility, http://www.gefweb.org/default.aspx (last visited Apr. 10, 2010). "The Global Environment Facility (GEF) unites 180 member governments—in partnership with international institutions, nongovernmental organizations, and the private sector—to address global environmental issues. An independent financial organization, the GEF provides grants to developing countries and countries with economies in transition for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants. These projects benefit the global environment, linking local, national, and global environmental challenges and promoting sustainable livelihoods. Established

twenty-five adaptation projects in India to help meet development goals in a changing climate scenario.[139]

However, there is no reliable estimate of the amount of money required for adaptation in India. The NAPCC makes no estimate of the funds needed for an effective adaptation program. There is also no mention of institutional arrangements for generating or utilizing and disbursing available funds. In the absence of a comprehensive adaptation plan, India could lose precious time and financial resources that would otherwise be available for adaptation.

THE ROAD AHEAD

India's main climate mitigation and adpatation instrument, the NAPCC, must be implemented and strengthened. In October 2009, Indian Environment Minister Jairam Ramesh announced the launch of the Indian Network of Climate Change Assessment.[140] Its purpose is to develop a better understanding of the phenomenon of climate change and the impact of climate change on the various sectors of the Indian economy and society.[141] This, in turn, would enable the development of a national adaptation framework. Effective climate change adaptation in India also seems to require the strenthening of existing government bodies, such as the National Rainfed Authority and the National Disaster Managment Authority.[142]

In addition, to reduce India's exposure to climate change risks, climate information systems must be strengthened and targeted to local communities. There is also a need to make technology more user-friendly to ensure that it does not intimidate the target group. Access to health, infrastructure, and disaster management tools and strategies also must be greatly improved to ensure that

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in 1991, the GEF is today the largest funder of projects to improve the global environment. The GEF has allocated $8.8 billion, supplemented by more than $38.7 billion in co-financing, for more than 2,400 projects in more than 165 developing countries and countries with economies in transition. Through its Small Grants Programme (SGP), the GEF has also made more than 10,000 small grants directly to nongovernmental and community organizations. The GEF partnership includes 10 agencies: the UN Development Programme; the UN Environment Programme; the World Bank; the UN Food and Agriculture Organization; the UN Industrial Development Organization; the African Development Bank; the Asian Development Bank; the European Bank for Reconstruction and Development; the Inter-American Development Bank; and the International Fund for Agricultural Development. The Scientific and Technical Advisory Panel provides technical and scientific advice on the GEF's policies and projects." Global Environmental Facility, What is the GEF?, http://www.gefweb.org/interior_right.aspx?id=50 (last visited Apr. 10, 2010).

139. *See* Global Environmental Facility, GEF Project Database, http://www.gefonline.org/ (select "India" from country drop-down menu; select "GEF Trust Funds" from funding source drop-down) (last visited Mar. 26, 2010).

140. MINISTRY OF ENVIRONMENT AND FORESTS, CLIMATE CHANGE AND INDIA: TOWARDS PREPARATION OF A COMPREHENSIVE CLIMATE CHANGE ASSESSMENT 3–4 (October 2009), *available at* http://www.indiaenvironmentportal.org.in/files/CC_and_India.pdf (2009).

141. *Id.*

142. World Bank, *Climate Change Impacts in Drought and Flood Affected Areas: Case Studies in India*, at 9, Report No. 43946-IN (June 1, 2008).

communities adequately adapt to climate change.

India must prioritize adaptation strategies at local levels, depending on the particular vulnerabilities of each locality and the resources that may be harnessed locally. One way to move forward would be to provide appropriate education, training, and empowerment to the *panchayats* (village councils).[143]

CONCLUSION

The NAPCC discusses several adaptation strategies. However, this major document has been criticized for not involving research institutions, civil society organizations, and local communities in its planning[144] and for lacking a program to educate people about climate change.[145] India seems to be caught between Scylla and Charybdis; on the one hand, it does not want constraints to fetter its development prospects, and on the other hand, it wants to be seen as a good global citizen cooperating on the climate change challenge.[146]

The Indian sub-continent is a diverse landscape with various climate regimes and social structures. Past emissions will result in some inevitable changes in climate, and adaptation is the only available and appropriate response to some of the changes.[147] About 700 million people depend on climate sensitive natural resources and sectors such as agriculture and fisheries for subsistence and livelihood.[148] Thus, adaptation urgently needs to be addressed. The costs of not addressing, or not adapting to, climate change is uncertain, but the welfare consequences are enormous.[149] Early action on adaptation is vital to the well-being of India's least-advantaged citizens and also is consistent with India's sense obligation to the global community.[150]

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143. The "panchayat" is a adjudicating and licensening agency in the self-government of an Indian caste, which usually consists of five members. The panchayat also sits as a court of law. Encyclopaedia Britannica Online, March 4, 2010, http://www.britannica.com/EBchecked/topic/440944/panchayat.

144. *See* Pandurang Hegde, *National Plan on Climate Change: A Plan Without Actions*, DECCAN HERALD, Nov. 26, 2009, at 11, *available at* http://www.deccanherald.com/content/37905/national-plan-climate-change-plan.html.

145. Rahul Goswami, *Blind Spots in India's New National Action Plan on Climate Change*, INFOCHANGE, Sept. 2008, http://infochangeindia.org/200809237384/Environment/Analysis/Blind-spots-in-India's-new-National-Action-Plan-on-Climate-Change.html.

146. Devesh Kapur et al., *Climate Change: India's Options*, ECON. & POL. WKLY, Aug. 1, 2009, at 34.

147. IPCC,-AR4 *supra* note 4, at 19.

148. Sathaye, *supra* note 2, at 318.

149. *Id.* at 320.

150. *See* Manmohan Singh, Prime Minister of India, Address at the 10th Delhi Sustainable Development Summit (Feb. 5, 2010), *available at* http://dsds.teriin.org/2010/PM_Speech.pdf; Manmohan Singh, Prime Minister of India, Speech on Release of Climate Change Action Plan (June 30, 2008), *available at* http://pmindia.nic.in/speech/content.asp?id=690.

NLSIR

THE MECHANISMS OF THE NATIONAL GREEN TRIBUNAL

—T.N. Subramanian* & Rubin Vakil**

Abstract The National Green Tribunals ('the Tribunal') were established across the nation to exclusively deal with questions related to the environment, and to promote sustainable development. Entrusted with the great responsibility of ensuring a safe and healthy environment, in practice, these tribunals face a multitude of issues. These range from an expanding scope of the Tribunal's jurisdiction to its disregard of the sustainable development principle and the principles of natural justice. The emergence of these issues necessitates a serious reconsideration, rethinking, and reflection by the Tribunal, on the exercise of its powers in consonance with the provisions of the National Green Tribunal Act ('the Act'). The Tribunal must harmonize environmental care and development through the principle of sustainable development. It should prevent abuse of the process of law, and interpret and apply the provisions of the Act in a manner such that justice is done to the environment, without injustice being done to others.

I. INTRODUCTION AND PHILOSOPHICAL UNDERPINNINGS

The alleviation of the masses out of poverty is not only a principal constitutional obligation for every elected government, but also the litmus test for its existence. The protection of the environment and maintenance of the ecological balance has become an equally pressing duty of every government. Striking a balance between these two objectives has grappled every nation in the world.

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This balancing act, between two palpably conflicting needs, becomes more complicated for the developing countries. The solution to this dichotomy lies in the concept of 'Sustainable Development'.

This concept was first conceived at the *United Nations Conference on the Human Environment* at Stockholm in June, 1972 ('the Stockholm Conference'). Pursuant to deliberations at the said Conference, a Declaration known as the Stockholm Declaration of 1972 was issued.[1] The said Declaration outlines the broad principles on the basis of which the concept of 'Sustainable Development' has evolved.[2] The concept was given a definite shape by the *World Commission on Environment and Development* in its Report titled *Our Common Future*, more popularly known as the *Brundtland Report*. The Brundtland Report ('the Report') summarily defines 'Sustainable Development' as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[3] The Report recorded that the essential needs of the vast number of people in developing countries for food, clothing, shelter, and jobs were not being met. The Report also emphasizes that the people, beyond their basic needs, also have a legitimate aspiration to an improved quality of life. The Report argues that the satisfaction of human needs and aspirations being the major objective of development, such development must be balanced with the need for the conservation of the environment in order to ensure the sustainability of the human race. The Report underlines the need for development—economic, social, and technological, and argues that a world in which poverty and inequity are endemic, is prone to ecological and other crises. After the publication of the Brundtland Report, various international conferences, United Nations General Assembly Resolutions, and Reports have discussed, adapted, and reiterated the concept of Sustainable Development.[4]

The Environment (Protection) Act, 1986 was passed by Parliament, *inter alia*, as a legislation aimed at incorporating and implementing the principles evolved and decisions taken at the Stockholm Conference and reflected in the Stockholm

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1 UN General Assembly, *United Nations Conference on the Human Environment*, UN Doc. A/RES/2994 (December 15, 1972), http://www.refworld.org/docid/3b00f1c840.html.

2 Principle 8 of the *Declaration of the United Nations Conference on the Human Environment*–

"Economic and social development is essential for ensuring a favourable living and working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life."

Principle 11 of the *Declaration of the United Nations Conference on the Human Environment*–

"The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by States and international organizations with a view to reaching agreement on meeting the possible national and international economic consequences resulting from the application of environmental measures."

3 United Nations, *Our Common Future - Brundtland Report* (1987).

4 United Nations, *Gathering a Body of Global Agreements: Sustainable Development*, http://www.un-documents.net/k-001303.htm.

Declaration.[5] Thus, the Environment (Protection) Act, 1986 is a statutory recognition of the principle of Sustainable Development, which all Courts and Tribunals in the country are bound to implement. Pursuant to the enactment of the Environment (Protection) Act, 1986, the ideas of development and environment have been harmonized and balanced. The Supreme Court has, in its landmark judgment in *Vellore Citizens' Welfare Forum* v. *Union of India*,[6] ('*Vellore Citizens Welfare Forum*') held that the traditional concept that development and ecology are opposed to each other is no longer acceptable. In the said judgment, the Supreme Court has accepted Sustainable Development as the balancing concept between development and ecology, and has held that the concept is part of customary international law. The judgment of the Supreme Court in *Indian Council for Enviro-Legal Action* v. *Union of India*,[7] has laid down the dictum that the necessity to preserve the environment must be seen as compatible with economic and other developments. The Supreme Court, in its judgment in *Essar Oil Ltd.* v. *Halar Utkarsh Samiti*,[8] ('*Essar Oil Ltd.*') has held that the objective of all laws on the environment should be to create harmony between development and environment, as neither one can be sacrificed at the altar of the other. Further, the Supreme Court has held that Sustainable Development means "what type or extent of development can take place which can be sustained by nature/ecology with or without mitigation".[9]

With the manifestation of the ill-effects of environmental degradation in larger measure, coupled with the evolution of the revolutionary concept of public interest litigation, the already over-burdened Supreme Court and the numerous High Courts were flooded with environment-related litigation. Apart from the constraints of judicial time and pendency of cases, the other challenge faced by the Constitutional courts was the lack of expertise to assess and evaluate complex scientific and technical data, which is an essential factor in dealing with environment-related litigation. Thus, the Supreme Court, in a series of judgments,emphasized on the need to establish 'Environment Courts' across the country, manned by judicial members and technical/scientific experts, to exclusively deal with matters relating to the environment.[10]

Pursuant to the aforesaid observations of the Supreme Court, the Law Commission of India undertook a detailed study on the subject of Environmental Courts which culminated in the 186th *Report of the Law Commission of India on the Proposal to Constitute Environment Courts.* In the said report, the Law

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5 Statement of Objects and Purpose of the Environment (Protection) Act, 1986 [Act No. 29 of 1986].

6 (1996) 5 SCC 647.

7 (2004) 2 SCC 392.

8 Essar Oil Ltd. v. Halar Utkarsh Samiti, (2004) 2 SCC 392.

9 Narmada Bachao Andolan v. Union of India, (2000) 10 SCC 664.

10 M.C. Mehta v. Union of India, (1986) 2 SCC 176; Indian Council for Enviro-Legal Action v. Union of India, (1996) 3 SCC 212; A.P. Pollution Control Board v. M.V. Nayudu, (1999) 2 SCC 718; A.P. Pollution Control Board (2) v. M.V. NayuduI, (2001) 2 SCC 62.

Commission recommended the establishment of Environment Courts in each State or for a group of States, manned by persons with judicial or legal experience, and assisted by persons having technical and scientific knowledge, and possessed with expertise on matters relating to the environment The Law Commission specifically enumerated the concept of Sustainable Development as one of the fundamental principles which the proposed Environment Courts would be obligated to apply and enforce in the matters to be adjudicated upon.[11] While dealing with the constitution of Environment Courts, the Law Commission emphasized on the need to maintain a proper balance between Sustainable Development and the control/regulation of pollution.[12] The Law Commission has also, almost prophetically, highlighted the potential abuse of environmental litigation for the purpose of blackmail. Therefore, it recommended that the proposed Environment Courts must be aware of and deal with such blackmail appropriately.[13]

Pursuant to the said report, the Parliament enacted the National Green Tribunal Act, 2010, for the establishment of National Green Tribunals across the nation, to exclusively deal with substantial questions relating to environment. The following section of the Article analyses the workings of this Act.

II. LIMITED JURISDICTION

The Statement of Objects and Reasons of the Act postulate that the risk to human health and environment arising out of "hazardous activities" has become a matter of concern. The right to a healthy environment is a part of the right to life under Article 21 of the Constitution of India.[14] The Act was enacted for the constitution of specialized environmental courts. The Tribunal has been set up for effective and expeditious disposal of civil cases involving substantial questions relating to the environment. However, Section 14 of the Act has circumscribed the jurisdiction of the Tribunal. As per Section 14 of the Act, the Tribunal shall have jurisdiction only in respect of those civil cases:

i) where a substantial question relating to the environment is involved; and

ii) that such question arises out of the implementation of the enactments specified in Schedule I of the Act.

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[11] Law Commission of India, 138th *Report of the Law Commission of India on Proposal to Constitute Environment Courts*, 132, 148 (September, 2003).

[12] *Id.*, at 8.

[13] Law Commission of India, *supra* note 11, at 20.

[14] A.P. Pollution Control Board (2) v. M.V. Nayudu, (2001) 2 SCC 62; Bandhua Mukti Morcha v. Union of India, (1984) 3 SCC 161.

Section 2(m) of the Act provides that a "substantial question relating to the environment" shall include an instance where, —

> "(i) there is a direct violation of a specific statutory environmental obligation by a person by which, —
>
> (A) the community at large other than an individual or group of individuals is affected or likely to be affected by the environmental consequences; or
>
> (B) the gravity of damage to the environment or property is substantial; or
>
> (C) the damage to public health is broadly measurable;
>
> (ii) the environmental consequences relate to a specific activity or a point source of pollution".

Thus, unless the aforesaid pre-requisites are primarily satisfied, invoking the jurisdiction of the Tribunal would clearly fall foul of Section 14. Experience has shown that numerous applications filed before the Tribunal relate to matters far beyond the scope of the Acts enumerated in Schedule I of the Act. Many matters relate to local municipal and town planning laws, in respect of which the Tribunal has neither the jurisdiction, nor the requisite expertise. The Hon'ble Bombay High Court in *Parshuram Uparkar* v. *Union of India*,[15] laid down that an application under Section 14 before the Tribunal is maintainable only if it raises a substantial question of law relating to the environment and that such question arises out of the implementation of the enactments specified in Schedule I of the Act. However, unfortunately, the said legal position has been ignored by the Tribunal in the exercise of its jurisdiction.

III. THE PRINCIPLE OF SUSTAINABLE DEVELOPMENT GIVEN A GO-BY

The Act, while granting powers to the Tribunal, expressly provides adjudication ought to take place not merely on the basis of the 'Precautionary Principle' and the 'Polluter Pays Principle', but rather, the Tribunal is also required to apply the principle of Sustainable Development. Section 20 of the Act is the statutory guideline for the Tribunal in this regard. In fact, the Preamble to the Act clearly stipulates that the object of the enactment of the Act is to implement the decisions taken at the Stockholm Conference, and the *United Nations Conference*

[15] PIL No. 49 of 2013, Order and Judgment dated May 8, 2013.

on Environment and Development held at Rio de Janeiro in June 1992.[16] The principle of Sustainable Development was one of the most important concepts evolved at the aforesaid conferences. The principle of Sustainable Development is also a part of the international law obligations of India, as held by the Hon'ble Supreme Court in *Vellore Citizens' Welfare Forum* case. The intendment of the Legislature is also very clear from the Statement of Objects and Purpose of the Act. The Hon'ble Supreme Court has consistently stated that development ought not to be hampered in the name of the environment. It has been reiterated time and again that development must be carried out in harmony with ecology. It has further been stated and restated that while the environment requires protection, the nation requires development.

An under-developed nation can cause immense harm to the lives of citizens of the country, leading to further environmental degradation. Therefore, the Legislature has mandated that the Tribunal must apply the principle of Sustainable Development in deciding environmental matters. However, unfortunately, in various matters, the principle of Sustainable Development, as provided for in Section 20 of the said Act, has been completely ignored by the Tribunal. The Tribunal has also overlooked the wealth of case law emanating from the Supreme Court in respect of balancing ecology and development. This is a matter of grave concern that requires appropriate corrective legislative action on one hand, and serious reflection and introspection on part of the Tribunal on the other hand. The Tribunal is duty-bound to accept that both development and environment must go hand in hand, as has been held by the Hon'ble Supreme Court, *inter alia*, in *Essar Oil Ltd.*[17]

IV. BY-PASSING THE LAW OF LIMITATION

The Legislature, in recognition of the possibility that statutory provisions may be misused, provided for a special period of limitation under Section 14, Section 15, and Section 16 of the Act. The Legislature further permitted, on sufficient cause being shown, an extension of the said period of limitation.However, any application beyond the period prescribed under either Section 14(3), or under Section 15(3), or under Section 16, is barred, and such application cannot be filed or adjudicated upon. The Tribunal has no jurisdiction to entertain any such barred applications. It is a settled position of law that limitation is a matter of jurisdiction.[18] The Tribunal is under an obligation (like any judicial or

[16] United Nations Conference on Environment and Development (1992), *Agenda 21, Rio Declaration,* reads, "20. Tribunal to apply certain principles — The Tribunal shall, while passing any order or decision or award, apply the principles of Sustainable Development, the precautionary principle and the polluter pays principle."

[17] (2004) 2 SCC 392.

[18] Pandurang Dhondi Chougule v. Maruti Hari Jadhav, AIR 1966 SC 153, ¶10; Foreshore Coop. Housing Society Ltd. v. Praveen D. Desai, (2015) 6 SCC 412.

quasi-judicial authority) to consider the question of limitation, irrespective of whether it is raised as a defense or not.

However, in its apparent zealousness to protect the environment, the Tribunal set up under the said Act has, on various occasions, proceeded to pass orders on applications and appeals which were *ex facie* filed beyond the period of limitation prescribed by the Act. Such orders, as per the law laid down in a series of judgments of the Supreme Court, are in fact *non-est*, and substantial time of the parties as well as the Tribunal was spent in execution applications based on such void/illegal orders. The language of the legislation is unambiguous and clear. Section 14 of the Act provides that "No application for adjudication of dispute under this section shall be entertained by the Tribunal unless it is made within a period of six months from the date on which the cause of action for such dispute first arose". The expression "cause of action first arose" is also used in Article 58 of the Limitation Act, 1963, which has been the subject matter of interpretation by the Hon'ble Supreme Court.[19] Despite the clear and unambiguous language used in the statute as to when the limitation begins, and when the cause of action arises, the Tribunal has been entertaining applications and appeals on the specious plea of continuous causes of action and/or recurring causes of action.This isinconsistent with the provisions of the Act. In fact, Zonal Bench of the Tribunal at Bhopal, in the case of *Aradhana Bhargav* v. *Ministry of Environment and Forests*,[20] has held that in view of the use of the words "first arose" in Section 14(3) and Section 15(3) of the Act, the concept of 'continuing cause of action' has no application under the Act. However, other Zonal Benches of the Tribunal have taken conflicting views on the issue, contrary to the express provisions of the statute.

In *Windsor Realty (P) Ltd.* v. *Ministry of Environment and Forest*, the Hon'ble Bombay High Court rejected the argument that Section 14 envisioned a continuous cause of action. It held that the cause of action cannot be deemed to have arisen as late as when a certain individual becomes aware of the environmental violation in question.[21] This is in view of the use of the expression "first arose", and therefore, once the cause of action arises, it continues to run. A non-vigilant litigant will therefore be deprived of the right to approach the Tribunal. However, this does not prevent other remedies (if available) from applying under general law.

V. RELIEF, RESTITUTION, AND COMPENSATION

Section 15, by itself, does not provide the procedure for the determination of whether there is any substantial question relating to the environment

[19] Khatri Hotels (P) Ltd. v. Union of India, (2011) 9 SCC 126, ¶24-30; Port of Kandla v. Hargovind Jasraj, (2013) 3 SCC 182, ¶21-24.

[20] Application No. 11/2013 (P.B. 46/2013 THC).

[21] 2016 SCC OnLine Bom 5613, ¶33-36.

as prescribed in Section 2(m). Before compensation/relief/restitution can be awarded under Section 15, it is imperative that there must be an adjudication as to whether there is any environmental degradation. Such adjudication must be done by competent authority *viz*., either a Tribunal, or a Court, or any such duly empowered body. However, in several cases, the Tribunal, without any adjudication, has entertained applications under Section 15 and awarded compensation. This has resulted in serious miscarriages of justice. Schedule II of the Act provides the heads under which compensation or relief for damage may be claimed for the purposes of Sections 15(4) and Section 17(1) of the Act. However, time and again, orders have been passed for awarding compensation without, in any manner, taking into account the provisions of Schedule II of the Act and without any application being made for compensation. Further, orders have been passed awarding compensation in matters where there has been no prior adjudication of environmental damage/degradation under Section 14 or Section 16, thereby taking it beyond the scope of the jurisdiction of the Tribunal.

It is further absolutely essential that while awarding compensation, the Hon'ble Tribunal must also record the degradation of or damage, if any, caused to the environment, for which the onus is on the Applicant to provide the Tribunal with sufficient and appropriate data. However, in case after case, one finds that the Tribunal embarks on an enquiry not envisaged within the provisions of Section 15, and which enquiry is, *ex-facie*, beyond the scope of an application under the Section 15. Further, the Tribunal seeks to collect data, which again is not normally the function of a judicial or quasi-judicial authority.

Despite the fact that plural remedies are barred under Rule 14 of the National Green Tribunal (Practices and Procedure) Rules, 2011, applications seeking plural remedies have been entertained. Matters have also been admitted without notice to the Respondents, contrary to the Rules framed under the Act.

VI. VIOLATION OF THE PRINCIPLES OF NATURAL JUSTICE

In respect of the Act, the procedure and powers under Section 19 clearly postulate that the principles of natural justice will be the guiding spirit for the Tribunal. However, one repeatedly notices that despite this provision in the statute, adverse orders have been passed (one too many), *inter alia*, directing entities who are not parties before the Tribunal to pay compensation. Such orders are direct violations of the fundamental principles of natural justice. It may be noted that, even in respect of interim applications before the Tribunal, Section 19 of the Act expressly provides that interim orders can be passed only after providing the concerned parties an opportunity to be heard. Thus, if that be the requirement of law, even for an interim application, it must apply with greater force at the stage of final disposal of an application or an appeal.

VII. LOCUS STANDI

Further, in entertaining applications, and by giving a broad interpretation to the expression "person aggrieved", the Tribunal has, in fact, encouraged various persons, who are either busybodies or persons with vested/collateral interests, to approach the Tribunal. Such abuse of the process of law ought to be contained by the Tribunal.

The expression "person aggrieved" needs to be clearly defined by the legislature in the same terms as that used in public interest litigation to prevent *malafide* and blackmail actions. A perusal of some of the applications before the Tribunal clearly reveals that the language and format of the applications is the same and that they all come from the same stable. Further, it is also apparent that applicants who do not understand English, masquerading as environmentalists, affirm applications in English without any understanding of its contents. The Tribunal entertains such applications, and thereby encourages *malafide* and dishonest litigants who are supported by hidden hands having an ulterior motive, to approach the Tribunal. This is not the object and the purpose for which the Act has been enacted. The dockets of the Tribunal are replete with examples of applicants who stay miles away from a particular project, but challenge environmental clearances issued to projects several years after the construction has begun. This is after several buildings (including hospitals and courts) have already been constructed, and numerous persons have taken possession of their respective premises. There are applicants who file applications against one company or entity, and challenge every project, wherever it may be situated. This clearly belies any intention to protect or be concerned with the environment, and amounts to gross abuse of the process of law. Mature thinking with the objective of taking the purpose of the Act forward needs to be combined with self-imposed restraint by the Tribunal so as to ensure compliance with the provisions of the Act. This will facilitate the implementation of the Act in its true spirit, and achieve the objective of protecting the environment.

One of the methods used to achieve the objective of curtailing *malafide* or motivated litigation is to emulate the Bombay High Court. The High Court, on realizing that the public interest litigations ('PILs') were being misused for blackmail, provided for detailed rules to be followed while entertaining PILs.[22] The said rules provide for disclosures/undertakings to ensure that there is no misuse of the instrument of public interest litigation. In the same manner, the Legislature or the Tribunal, with the object of preventing such *malafide* and motivated action, may frame appropriate rules/norms on the lines of those prescribed for a PIL, in respect of applications/appeals to the Tribunal. This would make the forum more effective, and achieve the underlying object of protection of the environment. It is

[22] The Bombay High Court Public Interest Litigation Rules, 2010, http://bombayhighcourt.nic.in/libweb/rules/R2010.01.html.

the foremost obligation of the Tribunal to ensure that the stream of justice is not polluted at the hands of those who approach Courts/Tribunals in a *malafide* manner and with unclean hands or ulterior motives.

The Act is a statute which has been enacted for the noble purpose of protecting the environment. However, the Tribunal, in view of its over-enthusiasm and/or exuberance to protect the environment, has caused harm to the environment in many matters. For example, take the case of alleged pollution caused by an industry in a river, which was brought before the Tribunal. The governmental authorities brought to the Tribunal's attention that there were several entities (including the association of industries) which were necessary parties, and thus, notice ought to be issued to them. However, the Tribunal arrived at a *prima facie* conclusion that there were no allegations against such entities, and therefore, there was no requirement to implead those entities. However, at the stage of passing final orders, the Tribunal passed a huge amount of compensation against such non-parties, in complete violation of the statutory provisions of the Act and the fundamental principles of natural justice. As a consequence, in the event of the order being set aside either in review or in appeal, and the applicants having been made aware of such entities being necessary parties, a fresh application would be barred by law. This is because the cause of action has already arisen, thus causing continuing harm to the environment. Thus, such an approach is in derogation of the objects of the Act.

VIII. JUDICIAL REVIEW

An important issue that requires analysis is in relation to whether the jurisdiction of the High Courts under Article 226 of the Constitution against orders of the Tribunal would be barred in view of an appeal being provided to the Supreme Court under Section 22 of the Act. In *L. Chandra Kumar* v. *Union of India*.,[23] ('*L. Chandra Kumar*') the Supreme Court held that the power of the High Courts to exercise judicial superintendence over the decisions of all Courts and Tribunals within their respective jurisdictions is part of the basic structure of the Constitution of India and that such power of superintendence cannot be taken away by any legislation. The said judgment was rendered in the case of Administrative Tribunals constituted under Articles 323A of the Constitution of India, unlike in the present case, where the Tribunal is a statutory Tribunal. Thus, the High Courts under Articles 226 and 227 of the Constitution of India have jurisdiction to entertain petitions against orders of the Tribunal. This is especially when such orders have been passed in violation of principles natural justice, are without jurisdiction, or if the order suffers from perversity. The position of law in *L. Chandra Kumar* has neither been overruled, nor whittled down so far, as by any larger Bench of the Hon'ble Supreme Court, but in fact has been

[23] (1997) 3 SCC 261.

reiterated time and again, including in a recent judgment of the Bombay High Court.[24]

IX. APPEAL

Section 22 of the Act provides for an appeal to the Supreme Court from orders passed by the Tribunal. Thus, the Supreme Court is the first appellate and the final authority to adjudicate the issues before the Tribunal. Many bodies and litigants may not have the reach and capability, financially, and even otherwise, to approach the Supreme Court in an appeal under Section 22. This makes the provision of appeal, in fact, virtually redundant in many cases. Thus, a provision of appeal directly to the Supreme Court renders the said provision ineffective, thereby depriving litigants of their fundamental right to access justice, in violation of Article 21 of the Constitution of India. However, as elucidated by the Supreme Court in *R.K. Jain* v. *Union of India*,[25] appeals from orders of all Tribunals ought to go to the High Court so that all facts and law can be considered appropriately in the statutory appeal. Pursuant to the same, a provision for an appeal to the Supreme Court (only in respect of questions of law) ought to be provided for. This is ideally the purpose for which the Supreme Court has been established under our Constitution. It would thus be apposite to provide for an appeal from orders of the Tribunal before the respective High Courts and also provide for circumstances in which an appeal can be filed before the High Court. This will afford an effective forum for appeal to those parties/entities which may be aggrieved by any order passed by the Tribunal. The legislature ought to consider this and amend the statute to ensure that every litigant has an opportunity, at least once, to have his grievances redressed in a forum which is approachable for him, both in terms of finance, as well as in terms of geography.

X. CONCLUSION

These are just some of the issues that require revisiting by the Legislature in relation to the provisions of the said Act.These issues also merit a rethinking and reflection by the Tribunal itself, on the exercise of its powers in consonance with the provisions of the said Act, in order to achieve the laudable objectives of the Act.

Environmental degradation poses an existential threat to mankind. There is no dispute that the Act and the Tribunal are the need of the hour for effective adjudication of environmental issues. However, an analysis of the working of the Tribunal reveals that much time is spent on issues relating to construction activities, which cause little harm, if any, to the environment, when compared to polluting industries and other activities. A relook at the provisions of

[24] Windsor Realty (P) Ltd. v. Ministry of Environment and Forest, 2016 SCC OnLine Bom 5613.
[25] (1993) 4 SCC 119, ¶76.

the Act and its implementation may be necessary to ensure that genuine, and not peripheral, environmental issues are addressed. The Tribunal, while adjudicating the cases before it, must ensure that the principle of Sustainable Development is duly implemented in letter and spirit. The Act vests in the Tribunal a great responsibility to ensure that we leave behind a safe and healthy environment for our future generations. To fulfill this responsibility, the Tribunal must — i) harmonize environment and development through the principle of Sustainable Development; ii) prevent abuse of the process of law; and iii) interpret and apply the provisions of the Act to ensure that justice is done to the environment, without any injustice being done to others.

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National Green Tribunal and Environmental Justice in India*

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Government of India has formed National Green Tribunal (NGT) during the year 2010. NGT is a „quasi-judicial" body exclusively deals with the environment related civil litigations. Before NGT has evolved, there were two previous efforts to establish green courts in India. These were National Environment Tribunal Act, of 1995 (NETA) and National Environment Appellate Authority Act, of 1997 (NEAA). However, the most effective environment court in the form of NGT has come into reality in 2010. After its establishment, NGT has settled many environmental issues and has got overwhelm response from different corners. This study conducted an empirical analysis of NGT judgments since its inception in October 2010 to December 2013. It analyzes the impact of NGT, the locations of conflicts. Special emphasis is given to the Coastal Zone management related conflicts settled in NGT. Although there many limitations in NGT act and its procedures, it can be viewed as a positive step towards the environmental justice in India.

[Keywords: National Green Tribunal, NGT Act, Environmental Justice, India**]**

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Introduction

Different countries have globally established separate „Green Courts" or „Green Tribunal" or „Environmental Court" to deal with the environment related litigations. Perhaps, India is the third country after Australia and New Zealand to have a specialized environment court. India is one of the pioneers in establishing the green court among developing countries. In India, National Green Tribunal (NGT) was established in 2010 under „Article 21" of the Indian Constitution. This particular article of Indian constitution assured its citizens for the protection of life and personal liberty. Keeping in view of this constitutional right, the government has started a new green tribunal to exclusively deal with the environment related litigations. The newly established "Green Tribunal" is a unique judicial mechanism in the sense that it is a special „fast-track quasi-judicial" body to ensure speedy justice on the environment related cases. The Tribunal comprises of equal number of judges and environmental experts to ensure efficient disposal of cases. It has also provision of compensation to be paid by the polluter for damages caused to the effected parties. The tribunal has jurisdiction on environment related subjects. Tribunal is not bound by the Civil Procedure Code of 1908. It works on the „principles of natural justice".

The Principal Bench of the tribunal is located in New Delhi, the capital of India. There are circuit benches in Bhopal, Chennai, Kolkata and Pune. The objective behind these establishments in different part of the country is to reach the remote parts of India. By this way people from different parts of the country can have access of tribunal. Principal bench as well as regional benches of the Green Tribunal is currently functional[1,2,3,4]. Beside this, another major purpose for the establishment of green court in different cities, aimed to reduce the burden of litigation in the general courts. Indian courts are already overburdened with the cases in every court from lower to upper courts[1, 13].

This paper is an exploratory study, deals with genesis and the gradual evolution of green court in India. The first section deals with the background of formation of green court in India followed by the structure of NGT and its jurisdictions. In the result section, from the analysis of NGT judgments, a couple of important cases in general and some coastal zone related are discussed. Last section of the paper discusses the limitations of NGT and finally the concluding remarks.

Background

The United Nations Conference on the Human Environment, address the global need for appropriate steps to protect and improve the environment. This first global environmental conference had adopted an action plan known as „The Stockholm Declaration of 1972". Principle 1

of the Stockholm Declaration stated that people have *"the fundamental right to freedom, equality and adequate conditions of life, in an environment of a 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"*[6, 7]. In unanimity with the Stockholm Declaration of 1972, the Indian Parliament amended the Indian Constitution and adopted Articles 48A, (g), and Article 253.7. Consequently, *The Water (Prevention and Control of Pollution) Act 1974* popularly known as *Water Act*, *The Air (Prevention and Control of Pollution) Act, 1981* known as *Air Act* and *the Environment (Protection) Act, of 1986* were passed by the Parliament. The Water Act of 1974 (Amended in 1988) passed in the parliament to ensure that untreated domestic and industrial pollutants are not discharged into the water bodies. Air Act of 1981 (Amended in 1987) was passed to control and reduce air and noise pollution. Environmental Protection Act 1986 (EP Act) was to protect and improve the environment. The legislation consolidated the provisions of the Air and the Water Act including rules relating to storing, handling and use of hazardous waste[8].

The second environment related conference, the Rio Conference of 1992 stressed the need for judicial and administrative access to the citizens of a nation-state. Also, it emphasized national law regarding liability and compensation for environmental damages for the pollution victims. Principle 10 of the Rio Declaration stated that *"Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided"*[9].

Almost at the same time, after about four decades of self-reliance strategy, India initiated its economic reforms in 1991. Subsequently, Indian economy was gradually liberalized. Indian Government facilitates the flow of Foreign Direct Investment (FDI) by raising the limits of foreign equity holding in many priority industries. After the reform, since 2003, Indian economy experienced average annual growth of more than 8 percent. India is evolving as one of the fastest growing emerging market, riding on the wave of extensive industrial growth. The liberalization process has unabatedly poured many project clearances in manufacturing, mining and exploration and other industrial sectors[10]. After the economic liberalization, it was observed that the exports and FDI grew in the more polluting sectors relative to the less polluting sectors in the post-liberalization period[11]. As a result the issues of ecology and social justice have come into a sharp focus along with the surge of social movements in the recent years. So, the need for effective, powerful, technically equipped Green Courts are too obvious and was the need of the hour[5].

As a government initiative, before the NGT Act come into existence, there were two other efforts to establish specialized environment courts in India. The first was *National Environmental Tribunal Act (NETA)* of 1995. The second one was *National Environmental Appellate Authority (NEAA)* constituted under the National Environmental Appellate Authority Act, 1997.

National Environment Tribunal Act, 1995 was passed by the Indian Parliament as a consequence of the Rio de Janeiro Conference. In 1995, the Central Government of India established the National Environment Tribunal (under the National Environment Tribunal Act, 1995). The main objective of the tribunal was to compensate the affected who deals with the harmful substances.

National Environment Appellate Authority Act, (NEAA) of 1997 was passed specifically for the purpose of applying certain *industries, operations or processes or class of industries, operations or processes shall be or shall not be carried out under the Environment (Protection) Act, 1986*. Ministry of Environment and Forests, Government of India established NEAA to address the environment clearances and related issues required in certain restricted areas. However, the Authority become defunct and the Act repealed with the enactment of the National Green Tribunal Bill 2009[12, 13, 14].

With the four path breaking judgments by the Supreme Court of India (M.C. Mehta vs. Union of India, 1986 (2) SCC 176; Indian Council for Environmental-Legal Action Vs Union of India: 1996(3) SCC 212; A.P. Pollution Control Board vs. M.V. Nayudu: 1999(2) SCC 718 (dated 27.1.1999) and A.P. Pollution Control Board vs. M.V. Nayudu II: 2001(2) SCC 62,), it was realized that for environment related lawsuits a separate environment court is required (for detail

see Ref[12, 13, 14]). It was understood that environmental cases involve interpretation and assessment of scientific data. Hence, environmental courts require subject experts along with professional judges. Also in another significant judgment, (A P Pollution Control Board vs. M.V. Nayudu), the idea of "multi-faceted" environmental court containing both judicial and technical/scientific experts gained the momentum. In all these above mentioned significant cases, because of scientific data and complexity involved, it was realized the need of both judicial members along with the subject experts who are familiar with the issues.

Following the observation, the Law Commission of India was assigned to undertake a detail study of the subject for the establishment of "Environment Courts" in India. The study took examples from *Lord Woolf in England* and *Environmental Court legislations* from Australia, New Zealand and other countries. The Commission has prepared a report recommending the laws on *"Environmental Courts and suggested that Courts must be established to reduce the pressure and burden on the High Courts and Supreme Court. These Courts will be Courts of fact and law, exercising all powers of a civil court in its original jurisdiction. They will also have appellate judicial powers against orders passed by the concerned authorities under the Water (Prevention and Control of Pollution) Act, 1974; Air (Prevention and Control of Pollution) Act, 1981 and The Environment (Protection) Act, 1986 with an enabling provision that the Central Government may notify these Courts as appellate courts under other environment related Acts as well. Such a law can be made under Art. 253 of the Constitution of India, read with Entry 13A of List I of Schedule VII to give effect to decisions taken in Stockholm Conference of 1972 and Rio Conference of 1992".* The commission also recommends that the proposed Environment Courts will be established initially at the State level and later many more courts may be established in other part of the country. According to the law commission, along with these establishments, the court will be accessible to citizens from the remotest part of the country[14].

National Green Tribunal Act, 2010

The National Green Tribunal (NGT) introduced on 18th October 2010 under the „National Green Tribunal Act 2010". Lok Sabha (the lower house of Indian Parliament) adopted the National Green Tribunal Bill, in 2009. The Bill replaces the earlier National Environmental Appellate Authority and has wider scope and coverage than NEAA. This judicial body was meant to deal exclusively with the environmental laws and to provide citizens the right to environment. Initially, it was decided in the bill that the main bench of the tribunal will be set up in Bhopal along with four other circuit Benches. However, now the main bench of NGT is located in Delhi, the national capital of India. The other branches are in Bhopal, Chennai and Kolkata[15]. Recently, the NGT started its Pune Circuit Bench. Pune Bench will have its jurisdiction over Maharashtra, Gujarat, Goa and Daman & Diu[16]. Setting up of court in different parts of the country serve as an example of global principles of environmental justice translated at the local level[1, 2, 3].

Composition of Tribunal

Section 4 of the *NGT Act* is dealing with the composition of the Tribunal. Section 4 states that the tribunal will consist of a full time chairperson. Chairperson will be appointed from Judge of the Supreme Court of India or Chief Justice of a High Court. The chairperson has power to invite any expert member in the related field to assist in the case if necessary. Chairperson along with the Central Government makes rules for governing the procedures and rules of the tribunal.

The tribunal consists of 10-20 judicial members. According to the act, there should not be less than ten but maximum twenty full time judicial members. Usually judges form different high courts and Supreme Court are appointed as judicial members of the tribunal. Beside the judicial members, the tribunal also consists of subject experts. The numbers of subject experts are also the same as judicial numbers. Subject experts in the tribunal work as full time employees and their number will be not less than ten but subject to maximum twenty. The balance in number of the judicial and expert member is kept so that the equal representations from both the groups are possible. Expert members are doctorate degree holder either in physical sciences or life sciences. Engineering post graduates can also act as an expert member. The experts must have experience of fifteen years in the relevant field including five years practical experience in the field of environment related issues[1].

According to Section 21 of NGT Act the decision of the Tribunal are taken by the opinion of the majority. Section 21 of NGT Act further states that after hearing a ligation if the opinions are equally divided the Chairperson has the power to decide the case after hearing. If the opinion equally divided even after the hearing in presence of Chairperson himself, the case may be referred to other Members of the Tribunal for his hearing. The other member has the responsibility to hear such application or appeal and decide the dispute[1].

Jurisdiction of Tribunal

The tribunal‟s jurisdictions include all environmental laws on air and water pollution, the Environment Protection Act, the Forest Conservation Act and the Biodiversity Act. With this effort, India joined Australia and New Zealand, which have such specialized environment tribunals[15].

Schedule - I of the NGT Act compromises of The Water (Prevention and Control of Pollution) Act, 1974, The Water (Prevention and Control of Pollution) Cess Act, 1977, The Forest (Conservation) Act, 1980, The Air (Prevention and Control of Pollution) Act, 1981, The Environment (Protection) Act, 1986, The Public Liability Insurance Act, 1991 and The Biological Diversity Act, 2002. Section 14 of National Green Tribunal Act mentioned that the Tribunal has jurisdiction over all civil cases related to environmental issues. However, it is important to mention here that two major environment related legislations have been excluded from the Schedule I of NGT Act. These two important legislations are The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 and The Wildlife (Protection) Act, 1972. Section 14 further adds the time limit of disputes to be entertained by the court. Point three of the section states *"No application for adjudication of dispute shall be entertained by the Tribunal unless it is made within a period of six months from the date on which the cause of action for such dispute first arose. Provided that the Tribunal may, if it is satisfied that the applicant was prevented by sufficient cause from filing the application within the said period, allow it to be filed within a further period not exceeding sixty days"*. Tribunal has the authority to hear and dispose off case related to the acts specified in Schedule I in accordance with sec 14 of the Act[1].

The tribunal has the authority to provide relief and compensation to the pollution victims and other damages to the environment arising under the enactments specified in the Schedule II. This schedule includes accident occurred while handling any hazardous substance. However, *"no application for grant of any compensation or relief or restitution of property or environment under section 15 of the act would be entertained by the Tribunal unless it is made within a period of five years from the date on which the cause for such compensation or relief first arose"*[1]. Still, the Tribunal may entertain applications beyond that prescribed time limit if it is satisfied by the causes mentioned by the applicant. If the court is satisfied, another sixty days of leniency period might be granted in that case.

The tribunal has also right to order for compensation of property damaged and also for restitution of the environment in the affected areas. In this case the tribunal has the authority similar to a civil court. Tribunal has also power to divide the compensation or relief payable under separate head specified in schedule II[1]. NGT Act for the first time gives a statutory recognition of the principle of no fault liability (absolute liability – first recognized in the Oleum Gas leak case) and principles of sustainable development, precautionary principle and polluter pays principle.

Materials and Methods

For this study all judgments from the very first judgment (The Sarpanch Grampanchayat & Others Vs MoEF, application no 1/2011, date 25th May 2011) to the judgments come in December 2013 are collected from the NGT website. The collected cases are stored in an in-house developed database to investigate the trends. The judgments are further analyzed for the types of judgments, the areas of conflicts and from which state of India the conflicts have come up. For this purpose, the locations of conflicts are plotted on India‟s map using Geographic information systems (GIS) software. DIVA-GIS is an open source software used to map the locations. This GIS software is downloaded used in this analysis from the website http://www.diva-gis.org/.

The impact of NGT: 2011-2013

Since its inception in October 2010, the National Green Tribunal of India is successfully upholding its mandate. It is acting as a „fast-track court‟ for effective and expeditious disposal of cases relating to environment protections and conservations. The following graph shows the number of cases settled by NGT till December 2013. It is observed from the Figure 1 that number of cases settled is increasing with the span of time. The number of cases settled is almost double in first half (January –June) of 2013 than

first half (January-June) of 2012. Similarly the July-December session of 2013 has settled more than double number of cases than July-December session of 2012. In this way NGT is proved to be the first-track court in environmental justice.

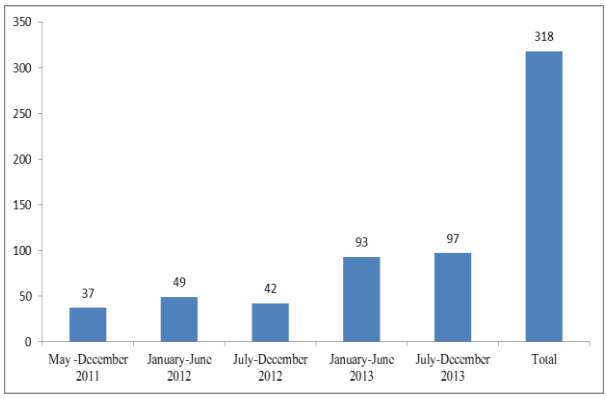

Fig. 1 Number of cases judged by National Green Tribunal till December 2013

NGT Cases form different states of India

Of the total 318 judgments given till December 2013, about 252 cases come from different states of India. The rest other cases are either withdrawn or found not suitable for the entry into the court. Figure 2 shows the number of settled cases from different states of India. The majority of cases are settled from the southern state of Tamil Nadu. About 65 (about 20 percent) cases were settled from Tamil Nadu till December 2013. Among them about thirteen applications are filed by the different fabric bleaching and dyeing units situated in Tamil Nadu to permit them to start their units.

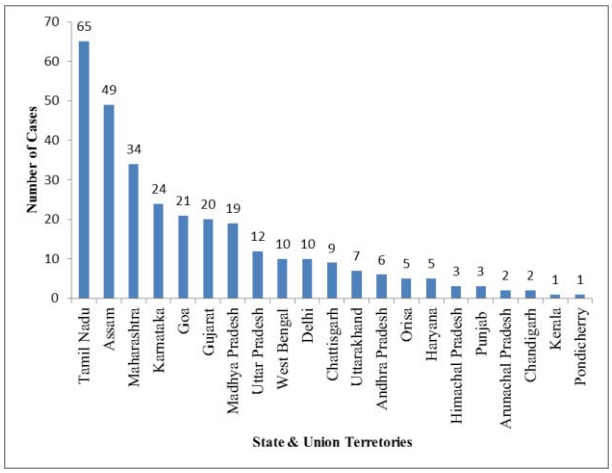

Fig.2 Number of settled cases from different Indian States

The second most number of judgments (about 49 cases, 15 percent) is given to the cases filed from Assam. These cases had been filed by environmental activists against the unregulated quarrying and mining activities near the Kaziranga National Park. This park is nationally as well as internationally reputed. The park has got its fame because it hosts about two-thirds of the world's One-horned Rhinoceroses and recognized as a World Heritage Site. The state pollution control board has permitted stone crashing units in and around the area of Kaziranga National Park. Besides the mining for stone, several brick industries also operated surrounding the Park. This was a major concern of environmental activists and concerned citizens[18].

A number of different and diverse litigations are filed from Maharashtra in the Green Tribunal. For example; cases filed against M/s Lavasa Corporation Ltd., for the development of hill station, Nuclear Power Corporation of India Limited for setting up Jaitapur Nuclear Power Park, Slum development projects in Mumbai and so on.

In Goa major litigations are with the Goa State Pollution Control Board and Coastal Zone Management authority related to environment clearance granted for construction programs in and around the coastal areas in Goa.

From the analysis of the litigation settled in NGT, it is observed that very few cases have been filed from the mineral rich states of India. For example, there are about 19 cases settled from Madhya Pradesh 9 from Chhattisgarh and 5 from Orissa. There are strong oppositions against the construction; mining and many coal based thermal power plants are proposed or operating from these areas. Although, numerous mining and manufacturing activities are going on in these states and Ministry of Environment and Forest (MoEF) has granted environmental clearance for these projects. The litigations filed in these cases are comparatively fewer. Although, there are many large dams either proposed or under construction in many northeastern states and stiff opposition from the people, there are no conflicts in the Green Court from any of these states (Figure 3).

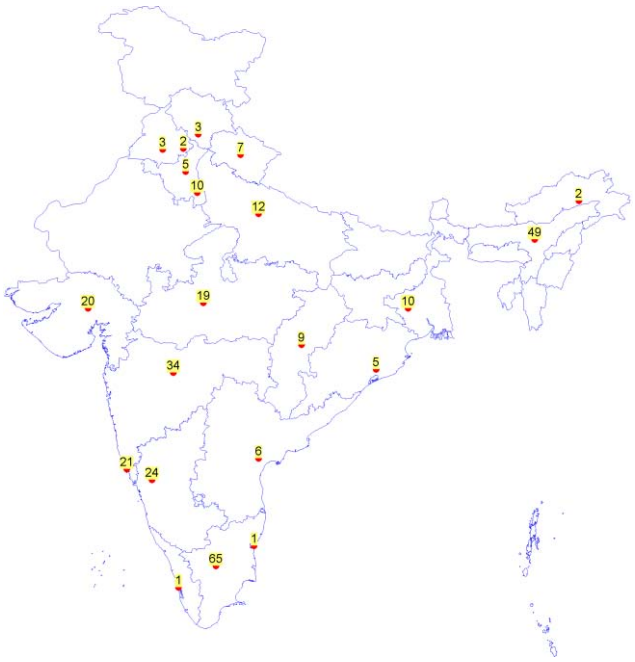

Fig.3 Locations of litigations in India

NGT take suo motu cognisance of environmental matters and start proceedings. Among the many such proceedings the Court has given judgments on its own Motion Vs State of HP Ors (Original Application No. 237/2013(THC)) Vs Ministry of Environment Others (Original Application No. 16/2013(CZ)) and suo motu Vs. State of MP &Ors (Suo Moto Application No. 56 of 2013). Two important suo motu judgments are discussed in the following sections.

NGT Vs State of HP Ors (Original Application No. 237/2013(THC)) was related to the increasing vehicular traffic in Himachal Pradesh particularly in Kullu-Manali and Rohtang Pass areas. Court was concerned with the degradation of natural habitat and snow cover on the mountains. The increasing tourist influx and vehicle emits hydrocarbon in the highly eco sensitive zone. The court directed state government to initiate scientific forestation program to preserve the environment. The court also directed government to collect fees forms the vehicles to pay in the „Green Tax Fund" to be used in environmental restoration programs.

The Tribunal at its own motion expressed its concern on dolomite mining in tiger reserve forest in Kanha National Park in Mandla and Balaghat districts of Madhya Pradesh (Original Application No. 16/2013(CZ)). The court has directed the Ministry of Environment & Forests and concerned departments of Madhya Pradesh Government to take necessary steps and further direct that the matter be listed in the Court on 31st July, 2014 to further follow up.

Types of Cases or Actors and Agencies in NGT Cases

NGT has completed more than three years since its beginning in October 2010. Within this short period of its existence, NGT has given its verdict in many significant environmental issues. The judgments include challenges to environment clearances, permission to start big projects like Posco and so on. There are also a number of significant judgments are given including the ban on the burning of plastics in open space, idol immersion and so on. The keyword analysis of cases shows that majority of cases are related to the objections pertaining to different environment clearances. A few high profile cases are discussed in the following section.

A plea challenging the environmental clearance granted to a thermal power project in Chhindwara district in Madhya Pradesh was admitted by NGT. This plea was filed by Medha Patkar and others (11-Jul-2013, Appeal No. 1/2013). Adani Power Limited, the Ministry of Environment and Forests and the state of Madhya Pradesh had objected to the application. The objection was raised on the basis of limitation under section 16 of the NGT Act. According to that section, the complaint is to be filed within 90 days since the project get environment clearance. The applicants justified the delay citing the reason that the response asked from the concerned authorities through Right to Information Act (RTI) caused the delay. So, the tribunal dismissed the issue of limitation filed by the respondents and condoned the delay[17].

Environment clearance given to Pohang Iron and Steel Company (POSCO) a major iron and steel company from South Korea, in Orissa was stopped by the NGT on 30th March 2012 (Appeal No 8/2011, Praffula Samantra vs. Union of India and Others).

Applications are filed by different fabric bleaching and dyeing units situated in the State of Tamil Nadu to start their industrial units. These applications are disposed with permission to approach the competent authority.

A number of petitions were filed in the NGT by RTI and environmental activist Rohit Choudhury from Assam. The petitions alleged that Assam government permitted a number of stone crushing and brick manufacturing units in and around Kaziranga National Park Area. The permits issued for stone crushing and querying units have violated 1996 notification of the MoEF, Government of India. The notice issued in 1996 had declared that area as a no development zone. So, NGT ordered the immediate removal of those industrial units operating inside that area.

The green court had also fined rupees 1 lakh each to both the state and the environment ministry for violating the notification[18].

NGT and coastal zone management

From the beginning of the court, till December 2013, about 29 judgments are given by the NGT in relation to Coastal Zone related litigations. Among these 29 judgments, 12 applications are allowed, 8 applications are dismissed, 6 applications are disposed with directions one each application is not allowed, partly allowed and modified.

NGT has imparted many notable judgments on the litigations to coastal zone related cases. In a couple of judgments NGT ordered to stop illegal constructions made by the individuals in the coastal areas. NGT has also contested and question about the legality of environment clearances granted by the respective authorities. Among many notable judgments of high profile cases like OPG Power Gujarat Pvt Ltd, Sesa Goa and so on are worth noting.

Following the petitions by fishermen, salt workers and local residents NGT has ordered OPG Power Gujarat Pvt Ltd to stop construction of its thermal power plant at Mundra in Gujarat till the requisite environmental clearance granted (Review Application No. 4/2012, M/s OPG Power Gujarat Private Ltd. and Others vs. Husain Saleh Mahmad Usman Bhai Kara and Others).

In another case NGT has set aside a Goa Coastal Zone Management Authority"s order. Goa Coastal Zone Management Authority (GCZMA) had issued notice to iron-ore mining company Sesa Goa (a Vedanta Group firm) to stop expansion of a jetty for loading and unloading of iron ores. GCZMA alleged that the construction and expansion of dock is illegal and ordered the demolition of the structure (Application No. 49/2012, M/s Sesa Goa Ltd. and Another vs. State of Goa and Others). NGT in its judgment suspend the earlier order issued by GCZMA saying the GCZMA„s order to stop and dismantle the structure violated the „principles of natural justice". However, GCZMA has given permission to initiate further legal proceedings against the company with the fresh issue of show cause notice if they intended to do that.

Following a petition filed by a Non-governmental Organization (NGO), named Coastal Action Network, the Southern Bench of NGT has directed the MoEF to chalk out a comprehensive management plan for the sea coast including the Coastal Zone Management Authorities (CZMA) of five coastal states and a Union Territory[19].

Among the many, the above mentioned cases have shown that NGT is concern about the conservation and preservation of coastal ecology. NGT can oversee the functioning of government mechanism related to conservation prevention & abatement of pollution in the coastal zones of the country.

Results and Discussion

As discussed in the genesis of the NGT, the Supreme Court of India had observed many complexities in a number of environment related litigations. So, the Court had realized for a special green court to deal with those complex issues. Accordingly SC had given responsibility to the Law Commission of India to do a feasibility study for setting up special fast track „environmental courts" to specially deal with the environmental related litigations. Law Commission in its report recommended environmental courts under Article 247 of the Constitution. „Tribunals", on the other hand, are established under Article 323A or Article 323B of the Constitution. The Tribunal does not have the same constitutional power and authority like the Civil Courts or High Courts[20]. So, in many of the recent cases accused questions the authority of tribunal to hear the litigations.

There are confrontations in different level between the government and NGT. Ministry of Environment and Forest (MoEF), Government of India has told the Supreme Court of India that the tribunal does not have the powers to act *suo moto* in environmental related cases. MoEF mentioned several shortcomings in the way the NGT function and points that sometimes it has been going beyond its jurisdiction. Ministry has recently told the Supreme Court that the tribunal lacks legal mandate and also sometimes government (here MoEF) disagree with the tribunal. Despite this NGT has gone beyond its jurisdiction and begun *suo motu* proceedings in a couple of cases. The Ministry has raised other issues of impropriety and claimed the NGT indulged in anti-government norms and regulations[21].

Government of Goa has also raised its objection in the recent ban imposed by the NGT on sand mining across the country. Goa government considered that the ban imposed is a case of judicial "over-reach". As a consequence of

NGT Order, many construction activities stopped because the high price and black marketing of sands happened in the state[22].

There is also controversy regarding the manpower hiring of the NGT. According to MoEF the supporting staffs hired by NGT do not follow the laid down norms and procedures by the government. Also, the balance of experts and judicial members on various benches has not been evenly spread as required[18]. The numbers of judicial and expert members are not fulfilled, for example, according to a right to information (RTI) response the NGT in March 2013, NGT was consisted of a chairperson, four judicial members and nine expert members[23].

Although, the Government had informed the Court that it had enough members to start six benches of the tribunal. Initially, the Government had appointed judges to man the tribunal, but the suitable infrastructure was not provided for its smooth functioning. Also, initially NGT faced budgetary Constrains because the money allocation was inadequate[20].

Chapter III section 14 (3) of the Green Tribunal deals with the jurisdiction, powers and proceedings of the Tribunal. This section reads *"No application for adjudication of dispute under this section shall be entertained by the Tribunal unless it is made within a period of six months from the date on which the cause of action for such dispute first arose"*. However, if there are valid reasons, the Tribunal may allow another maximum 60 days extension. This time-limitation clause is very limiting and not sufficient in many a times relating to health and pollution. Pollution related cases are sometimes take long time to develop their symptoms in human or other animal health. For instance, the effect of radioactive mining and processing, mercury, arsenic poisoning, asbestosis, silicosis and so on have very long term effect on animal health and take many years to develop its visible symptoms.

The expert members of NGT include technical experts from science branch (life sciences, physical science), and engineering or other technology areas. Interestingly, there is no provision for social scientists, environmental activists or other concerned citizens with appropriate specialization or familiarity with environment or occupational risk[13].

Finally, it is important to make the point that NGT‟s jurisdiction is limited to the acts mentioned in the schedule. Hence both the HC and SC also continue to play a concomitant and important role in serving as a forum for environmental public interest litigations. This may not direct relation with statutory violations; for instance environmental health matters.

Conclusion

Along with the similar line of environmental court established in the developed countries for example in Australia and New Zeeland, India has started Green Tribunal in 2010. The tribunal is a „special fast-track quasi-judicial body‟ consists of equal number of judicial and subject experts. It is expected that, the combination of both types of professionals will ensure environmental justice and quick disposal of cases. Since its inception, NGT has given many fast-track judgments in various cases and has passed several orders to the respective authorities like ban on illegal sand mining, against noise pollution in Delhi, preservation of biodiversity of Western Ghat Mountains, wildlife protection in Kaziranga National Park in Assam, suspended many environmental clearance and so on. In this way, NGT is working quite well and ensuring its mandate to impart justice in environment related litigations. After post liberalization Indian economy, NGT within its jurisdictions is checking the unabated drive towards industrialization. Although, it is unlikely that NGT is a cure for all environmental problems, but certainly it is going to provide a lead, in the new forms of environmental dispute resolution. Therefore, it is expected that the NGT is certainly going to benefit Indian natural landscape to a great extent.

Acknowledgement

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Site of World Culture festival organised by Sri Sri Ravi Shankar's Art of Living foundation on the floodplains of the Yamuna in March 2016. Credit: PTI

New Delhi: The National Green Tribunal (NGT) held Sri Sri Ravi Shankar's Art of Living (AoL) "responsible" for causing damage to the Yamuna floodplains by conducting the World Culture Festival there and directed that the Rs 5 crore paid by the organisation in fine be utilised by the Delhi Development Authority (DDA) for restoration of the affected area. In its response, AoL said it would move the Supreme Court against the verdict.

The NGT bench – headed by its chairperson Justice Swatanter Kumar – which has been hearing the issue since before the event was even held, said in its order: "We hold Art of Living responsible for the damage to the Yamuna floodplains. We hold them responsible for the restoration to be carried out by the DDA.

The bench had last year imposed a Rs 5-crore fine on AoL, which was paid in two tranches by the foundation. It had first deposited Rs 25 lakh with the DDA and a few months later had deposited the remaining amount of Rs 4.75 crore.

In its order, the NGT said the DDA would carry out the restoration work only after Sri Sri's foundation had deposited the remaining amount.

The forum had imposed the fine as interim environmental compensation for the damage caused by the event and had declared that if the cost of restoration exceeded Rs 5 crore then the DDA would be entitled to recover the same from the foundation itself.

The green forum also chastised the DDA for allowing the event on the floodplains. "The DDA has failed to perform its statutory functions of maintaining the ecology. It shall assess the quantum of damage and carry out the restoration work," the bench said.

While AoL has deposited Rs 5 crore for now, the cost of restoration is expected to be much higher if the assessment of a committee constituted to probe the matter is anything to go by. An expert committee, headed by water resources secretary Shashi Shekhar had stated in April that it could cost as much as Rs 13.29 crore to restore the floodplains. It had also observed that the exercise could take up to ten years.

In its 47-page report, the high-powered panel had stated that the floodplains had lost "almost all its natural vegetation" like trees, shrubs, tall grasses, aquatic vegetation, including water hyacinth that provides habitat to a large number of animals, insects and mud-dwelling organisms because of the three-day event. The case had pegged various arms of the government against each other as while the committee had found faults with the event, the Ministry of Environment, Forests and Climate Change had contended that as per a 2006 environment impact assessment report, the festival did not require any environmental clearance.

The arguments in the matter had continued thereafter and after their completion, the NGT had in November reserved its verdict.

For its part, the DDA had submitted that it had drawn up plans for beautification, afforestation, development of wetland and ecological restoration of the Yamuna floodplains. It had also put forth a timeline saying that 7-8 months would be needed for the tendering process for the two phases of Yamuna Floodplain Development Programme.

According to petitioner Manoj Misra's advocate Sanjay Parikh, the DDA had also stated that it would further assess and set quantum of damage and submit a final compensation amount. "If the amount is more, it is to be taken from Art of Living for the damage caused. If it is less, the rest of the amount will be refunded," he said.

In its response, the Art of Living said it was "disappointed with the decision" of the NGT as its submissions were "not dealt with/considered". Stating that it would appeal to the Supreme Court, the organisation said the World Culture Festival was conducted to "spread the message of global peace and harmony in diversity by bringing together spiritual and religious leaders, politicians, peacemakers and artists from across the world".

It said the event was conducted by "complying with all environmental norms by procuring approvals from the Ministry of Environment, Forests and Climate Change department, the Delhi Pollution Control Committee, the Uttar Pradesh Irrigation Committee, Delhi Disaster Management Authority, Irrigation and Flood Control Department of Delhi and others."

Stating that it was committed to work towards the good of the society, the AoL said it was confident of getting justice from the apex court

FUNDAMENTAL PRINCIPLES OF ENVIRONMENTAL PROTECTION

Sustainable Development

The concept of sustainable use of earth's resource is an ancient one. Without the principles of sustainability as a way of life, humans would not have survived in the 20th century. The principle of sustainable development received impetus with the adoption of Stockholm Declaration in 1972, World Conservation Strategy prepared in 1980 by the World Conservation Union (IUCN) with the advice and assistance of the United Nations Environment Programme (UNEP), World Charter for Nature of 1982, Report of the World Commission on Environment and Development under the chairmanship of Geo Harlem Brundtland (Brundtland Report), Our Common Future of 1987, the document Caring for the Earth; A Strategy for the Sustainable Living developed by the second world conservation project comprised of the representatives of the IUCN, UNEP and the Worldwide Fund for the Nature. The concept of sustainable development is the foundation stone of the Montreal Protocol for the Protection of Ozone Layer of 1987 and the instruments adopted at the UN Conference on Environment and Development (World Summit) held at Rio in 1992.

Meaning and Definition

The Brundtland Report defines, 'sustainable development' as 'development that meets the needs of the present generation without compromising on the ability of the future generations to meet their own needs.' The report emphasizes that sustainable development means an integration of economics and ecology in decision making at all levels.

How Judiciary Interpreted Sustainable Development?

Indian judiciary has demonstrated exemplary activism to implement the mandate of sustainable development. In the past, Indian courts did not refer expressly to sustainable development but implicitly gave effect to it. The Supreme Court has recognized the principle of sustainable development as a basis for balancing ecological imperatives with developmental goals. In Rural Litigation and Entitlement Kendra, Dehradun v. State of U.P., the Supreme Court was faced with the problem of the mining activities in the limestone quarries in Dehradun-Mussoorie area. This was the first case of its kind in the country involving issues relating to environment and ecological balance and brought into sharp focus the conflict between development and conservation. In this case, the Supreme Court emphasized the need for reconciling development and conservation in the larger interest of the country.

In Kinkri Devi v. State of Himachal Pradesh, the Himachal Pradesh High Court observed that if industrial growth sought to be achieved by reckless mining resulting in loss of life, loss of property, loss of amenities like water supply and creating of ecological imbalance then there may ultimately be no real economic growth and no real development.

In People united for Better Living in Calcutta v. State of West Bengal, the Calcutta High Court observed that it is true that in a developing country there shall have to be developments, but that developments must be in harmony with the environment. There has to be a proper balance between the economic growth and environment. So that both can exist without affecting each other.

The Supreme Court in Indian Council for Enviro-legal Actions v. Union of India, recognized polluter pays principle as an integral feature of sustainable development and observed that the remedy and betterment of damaged society is part of the process of sustainable development.

In Vellore Citizens Welfare Forum v. Union of India, the Supreme Court of India recognized the Principle of sustainable development as a basis for balancing ecological imperatives with developmental goods. Rejecting the old notion that development and environment cannot go together, the Supreme Court gave a landmark judgment and held that sustainable development is a viable concept to eradicate poverty. It will improve the quality of human life if human beings live within the carrying capacity of the life supporting ecosystem.

The Supreme Court in A.P. Pollution Control Board v. M.V. Nayudu, observed that in order to ensure that there is neither damage to the environment nor to the ecology and, at the same time ensuring sustainable development it can refer scientific and technical aspects for investigation and opinions to statutory expert bodies having combination of both judicial and technical expertise in such matter.

The Supreme Court in M.C. Mehta v. Union of India, observed that "the development and the protection of environments are not enemies. If without degrading the environment or minimizing adverse effects thereupon by applying stringent safeguards, it is possible to carry on development activity applying the principles of sustainable development, in that eventuality, the development has to go on because one cannot lose sight of the need for development of industries, projects, etc. including the need to improve employment opportunities and the generation of revenue. A balance has to be struck

Precautionary Principle

'Precautionary principle' plays a significant role in determining whether developmental process is sustainable or not. 'Precautionary principle' underlies sustainable development which requires that the developmental activity must be stopped and prevented if it causes serious and irreversible environmental damage
In Vellore Citizens Welfare Forum v. Union of India (Tamil Nadu Tanneries Case), about 900 tanneries in five districts of the State of Tamil Nadu were discharging enormous amount of untreated effluent consisting of about 170 different types of chemicals into agricultural fields, roadside, waterways and open land. About 35,000 hectares of land became partially or totally unfit for cultivation. The water in the area became unfit for consumption and irrigation purposes. In his judgment, Justice Kuldip Singh (known to be a Green Judge) observed that, "even otherwise once these principles are accepted as part of the Customary International Law, there would be no difficulty in accepting them as part of the domestic law. It is almost accepted proposition of municipal law, that the rule of customary international law, which are not contrary to the municipal law shall be deemed to have been incorporated in the domestic law and shall also be followed by the Courts of laws of the country." One of the significant directions given by the Supreme Court in this litigation was contained in an order passed in 1995 whereby some of the industries were required to set up effluent treatment plants. In another order passed in 1996, the Supreme Court issued notices to some of the tanneries to

show cause why they should not be asked to pay pollution fine. The Supreme Court also recognized the Precautionary Principle, which is one of the principles of sustainable development. It was said that in the context of municipal law, the Precautionary Principle means : -

(1) Environmental measures – To anticipate, prevent and attack the causes of environmental degradation.
(2) Lack of scientific enquiry should not be used to postpone measures for prevention of environmental degradation.
(3) The onus of proof is on the actor, developer or industrialist to show that his action is environmentally benign.

The introduction of the 'onus of proof' as a factor relevant for environmental protection was developed for the first time in this case. Precautionary duties must not only be triggered by the suspicion of concrete danger but also by (justified) concern or risk potential.

In A.P. Pollution Control Board v. M.V. Nayudu, the Supreme Court made a reference to the Stockholm Declaration and the U.N. General Assembly Resolution on World Charter for Nature, 1982. The principle has recently been extended and quite significantly so, in a case pertaining to the import of hazardous waste, to include the cost not only of avoiding pollution, but also remedying the damage. Reference was made to Principles 15 and 16 of the Rio Declaration and it was said, "The nature and extent of cost and the circumstances in which the principle will apply may differ from case to case."
n *Narmada Bachao Andolan v. Union of India*, precautionary principle came to be considered by the majority of judges. The Court also took the view that the doctrine is to be employed only in cases of pollution when its impact is uncertain and non-negligible.

In *M.C. Mehta v. Union of India,* the Supreme Court once again followed the path of sustainable development and directed that the industries operating in Taj Trapezium Zone using a coke/coal as industrial fuel must stop functioning and they could relocate to the alternate site provided under the Agra Master Plan. It further stated that not even 1% chance could be taken when human life a part, the preservation of a prestigious monument like the Taj was involved.

Polluter Pays Principle
Polluter Pays Principle has become a popular catchphrase in recent times. 'If you make a mess, it's your duty to clean it up'- this is the main basis of this slogan. It should be mentioned that in environmental law, the 'polluter pays principle' does not refer to "fault." Instead, it favors a curative approach which is concerned with repairing ecological damage. It's a principle in international environmental law where the polluting party pays for the damage done to the natural environment. It is regarded as a regional custom because of the strong support it has received in most Organization for Economic Co-operation and Development (OECD) and European Community (EC) countries. International environmental law itself mentions little about the principle.

In recent days, the polluter pays principle is seen as a way of internalizing pollution-related costs within the context of the economic rationality of the enterprise. There is a close

relationship between a country's environmental policy and its overall socioeconomic policy. Furthermore, under this principle it is not the responsibility of government to meet the costs involved in either prevention of environmental damage, or in carrying out remedial action, because the effect of this would be to shift the financial burden of the pollution incident to the taxpayer. But State practice does not support the view that all de-pollution costs should be borne by the polluter, particularly where transnational dispute is involved.

The first major reference to the Polluter Pays Principle (PPP) appeared 1972 in the OECD Guiding Principles Concerning International Economic Aspects of Environmental Policies (henceforth called OECD Guiding Principles). The PPP as a guiding principle across countries became necessary because some countries faced complaints by national firms about rising costs and a loss of international competitiveness following a national implementation of the PPP within their borders. The OECD Guiding Principles defines the PPP as an instrument for "... allocating costs of pollution prevention and control measures".
In Indian Council for Enviro-Legal Action & Ors v. Union of India, (Bichhri Village case) the Supreme Court accepted the Polluter Pays principle. In this case, some chemical factories in Bichhri (Udaipur District) produced hazardous chemicals like oleum etc. These industries did not have the requisite clearances, licences, etc. nor did they have necessary equipment for the treatment of discharged toxic effluents. Toxic sludge and untreated waste waters resulted in the percolation of toxic substances into the bowels of the Earth. Aquifers and subterranean supplies of water got polluted; wells and streams turned dark and dirty; water not only became unfit for human consumption but also unfit for cattle to drink and for irrigation of land. So much so, even the soil became unfit for cultivation. Death, disease and other disasters gradually resulted and the villagers in the area revolted as a result of this enormous environmental degradation. The District Magistrate of the area had to resort to Section 144 of the Criminal Procedure Code to avoid any untoward incident.

A writ petition under Article 32 of the Constitution was filed in the Supreme Court and the Court asked for a report to be prepared by the National Environmental Engineering Research Institute (NEERI) as to the choice and scale of available remedial alternatives. NEERI suggested the application of the Polluter Pays principle inasmuch as “the incident involved deliberate release of untreated acidic process waste water and negligent handling of waste sludge knowing fully well the implication of such acts.” The cost of restoration was expected to be in the region of Rs. 40 crores. The Supreme Court examined all the available material and concluded that the industries alone were responsible for the damage to the soil, underground water and the village in general.

The Supreme Court endorsed the Polluter Pays principle. It was said, “The Polluter Pays Principle as interpreted by this Court means that the absolute liability for harm to the environment extends not only to compensate the victims of pollution but also the cost of restoring the environmental degradation. Remediation of damaged environment is part of the process of sustainable development.”

The Supreme Court held that as per the Polluter Pays principle “… once the activity carried on is hazardous or inherently dangerous, the person carrying on such activity is liable to make good the loss caused to any other person by his activity irrespective of the fact whether he took

reasonable care while carrying on his activity. The rule is premised on the very nature of the activity carried on."
In the M.C. Mehta v. Union of India & Ors (Calcutta Tanneries Case), the Polluter Pays principle relating to relocation of industries was applied with a direction to those relocated industries to pay 25% of the cost of land. Those who did not pay for the cost of land were directed to be closed. The Supreme Court again resorted to directions earlier given in Vellore Citizens Welfare Forum for setting up effluent treatment plants.

It needs to be mentioned that a strict interpretation of the Polluter Pays principle requires that the polluter should pay for causing the pollution and consequential costs for any general deterioration of the environment while another view is that the polluter is only responsible for paying the costs of pollution control measures. Generally speaking, the polluter must pay for

- The cost of pollution abatement.
- The cost of environment recovery.
- Compensation costs for victims of damages if any, due to pollution.

In Vellore Citizens Welfare Forum v. Union of India, Resultantly, the Supreme Court recognized Sustainable Development, the Precautionary Principle and the Polluter Pays principle as a part of our environmental jurisprudence.

In S. Jagannath v. Union of India, the Supreme Court held that sea beaches and sea coasts are gifts of nature and any activity polluting the same cannot be permitted. The intensified shrimp (prawn) farming culture industry by modern method in coastal areas was causing degradation of mangrove ecosystem, depletion of plantation discharge of highly polluting effluents and pollution of potable as well as ground water.

Public Trust Doctrine
Another major principle accepted by the Supreme Court is the public trust doctrine for the protection of natural resource. This doctrine came up for consideration in the M.C. Mehta v. Kamal Nath.

A rather unusual situation had arisen in this case. The flow of the river Beas was deliberately diverted because it used to flood Span Motels in the Kulu Manali valley in which a prominent politician's family had a direct interest. The motel was also allotted protected forestland by the State Government and had also encroached on protected forestland, which encroachment was subsequently regularized.

The Supreme Court used the public trust doctrine in this case to restore the environment to its original condition. Briefly, this doctrine postulates that the public has a right to expect that certain lands and natural areas will retain their natural characteristics.

Applying the public trust doctrine, the Supreme Court cancelled the lease of forestland granted in favour of Span Motels and the State Government was directed to take over the area and restore it to its original condition. The motel was directed to pay compensation (damages for

restitution of the environment and ecology of the area). It was also asked to show cause why a pollution fine be not imposed.

While deciding the show cause notice regarding imposition of a pollution fine, the Supreme Court held that in law the fine could not be imposed without a trial and a finding that the motel is guilty of an offence under the Water (Prevention and Control of Pollution) Act, 1974. Accordingly, no pollution fine was imposed on Span Motels but it was asked to show cause why it should not pay exemplary damages. After considering the reply of Span Motels, exemplary damages of Rs.10 lakhs were imposed.

In M.I. Builders Pvt. Ltd. V. Radhey Shyam Sahu, Lucknow nagar Mahapalika permitted M.I. Builders Pvt. Ltd. (the appellant herein) to construct an underground shopping complex beneath the Jhandewala Park. The major part of the work was completed. The High Court quashed the relevant resolutions that permitted the construction. When it set aside the agreement, the High Court had noticed certain facts. The park was of historical importance, which the Mahapalika did not deny. Preservation or maintenance of the park was necessary from the environment angle. The only reason advanced by the Mahapalika for construction of the underground commercial complex was to ease the congestion in the area. The High Court said that construction of the underground shopping complex would only complicate the situation and the present scheme would further congest the area. The builders appealed. The Supreme Court went on to say that Mahapalika is the trustee for the proper management of the park. When true nature of the park, as it existed, is destroyed it would be violative of the doctrine of public trust as expounded by this court, the court quotes that the idea of public trusteeship rests upon three principles. Firstly, Certain interests like the air and the sea have such importance to the citizenry that it would be unwise to make them the subject of private ownership. Secondly, They should be made freely available to the entire citizenry without regard to economic status. Thirdly, It is principle purpose of government to promote the general public rather than to redistribute public goods from broad public use to restrict private benefit.

GENERAL PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW

Max Valverde Soto[*]

This article is a description of the general principles and rules of international environmental law that have emerged from international treaties, agreements, and customs.[1] The significance of the generality of these principles is that they can be applied to the international community for the protection of the environment.[2]

Under traditional views, public international law derives from one of four sources: international conventions; international customs; general principles of law recognized by civilized nations; and judicial decisions

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1. For the difference between general principles of law and general principles of international law, the latter discussed in here, see M. Virally, *The Sources of International Law*, *in* MANUAL OF PUBLIC INTERNATIONAL LAW 143 (1968). General principles of international environmental law may refer to rules of customary international law, to rules derived from treaties, to general principles of law as stated in article 38(I)(c) of the Statute of the International Court of Justice or to logical propositions resulting from judicial reasoning. Statute of the International Court of Justice, 1945 I.C.J. Acts & Docs. art. 38(I). *See also* G. Fitzmaurice, 2 *General Principles Law*, 92 HAGUE RECUEIL (1957).

2. B. CHENG, GENERAL PRINCIPLES OF LAW AS APPLIED BY INTERNATIONAL COURTS AND TRIBUNAL 376 (1953).

and teachings of highly qualified legal scholars.[3] Relatively new international environmental law is developing from the aforementioned sources, as well as from less traditional and binding sources.

There is no international instrument of global application which defines the rights and duties of the countries in environmental matters. Nevertheless, resolutions and declarations of international agencies in charge of the environmental controls, such as the Atomic Energy Agency, state the practices and decisions of international tribunals which have played important roles in the development of rules. From the large body of international instruments dealing with environmental issues, it is possible to point out seven principles. The consistency and acceptance is not the same for each, as will be shown.

I. SOVEREIGNTY AND RESPONSIBILITY

International environmental law has developed between two apparently contradicting principles. First, states have sovereign rights over their natural resources. Second, states should not cause damage to the environment. Although the concept of a state's sovereignty over its natural resources is rooted in the old principle of territorial sovereignty, the United Nations General Assembly has further encouraged it declaring, *inter alia*, that the right of peoples and nations to permanent sovereignty over their natural resources and wealth must be exercised in the interest of their national development, and of the well-being of the people of the state.[4] This resolution reflects the right to permanent sovereignty over natural resources as an international right, and has been accepted by tribunals as a reflection of international customs.[5] National sovereignty over natural resources has been affirmed in international agreements.[6]

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3. Statute of the International Court of Justice, *supra* note 1. *See also* L. HENKIN ET AL., INTERNATIONAL LAW 35 (1986).

4. *Declaration on Permanent Sovereignty over Natural Resources Pe*1803 (XVII) (Dec. 14, 1962); *see also Declaration of the Right to Development*, G.A. Res. 41/128 (Dec. 4, 1986).

5. Texaco Overseas Petroleum Co. and California Asiatic Oil Co. v. Libya, 53 I.L.R. 87 (Mar. 24, 1982); Kuwait v. Independent Am. Oil Co., 21 I.L.M. 976.

6. United Nations Education, Scientific and Cultural Organization Convention for the Protection of the World Cultural and Natural Heritage, Nov. 16, 1972, art. 15, 11 I.L.M. 1358,1363 [hereinafter UNESCO on Heritage]; United Nations Conference on Environmental Development: Convention on Biological Diversity, June 5, 1992, princ. 2, 31 I.L.M. 818 [hereinafter U.N. Convention on Biological Diversity]; Convention Relative to the Preservation of Fauna and Flora in their Natural State, Nov. 8, 1933, art. 9(6), 172 L.N.T.S. 241; Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Feb. 2, 1971, art. 2(3), 996 U.N.T.S. 245 [hereinafter Rasmar Convention on Wetlands]; International Tropical Timber Agreement, Nov. 18, 1983, art. 1, U.N. Doc. TD/TIMBER/ 11 Rev. 1 (1984); Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their

The concept of sovereignty is not absolute, and is subject to a general duty not to cause environmental damage to the environment of other states, or to areas beyond a state's national jurisdiction. As stated in the 1992 Rio Declaration:

> 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 areas beyond the limits of national jurisdiction.[7]

This is a derivation from the general maxim that the possession of rights involves the performance of corresponding obligations.[8]

The responsibility not to cause environmental damage precedes the Rio Declaration. There is an obligation of all states to protect the rights of other states, as elaborated in *Trail Smelter*,[9] a case which stated that:

> under principles of international law . . . no state has the right to use or permit the use of territory in such a manner as to cause injury by fumes in or to the territory of another of the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.[10]

This principle was further developed in 1961 when the United Nations General Assembly declared that "[T]he fundamental principles of international law impose a responsibility on all states concerning actions which might have harmful biological consequences for the existing and future generations of peoples of other states, by increasing the levels of radioactive fallout."[11] The duty to avoid environmental damage also has

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Disposal, Mar. 22, 1989, art. 12, 28 I.L.M. 649, 668; United Nations Conference on Environmental Development: Framework Convention on Climate Change, May 9, 1992, art. 14, 31 I.L.M. 849, 867 [hereinafter U.N. Convention on Climate Change].

7. *See* United Nations Convention on the Rio Declaration of Environment and Development, June 15, 1992, princ. 2, 31 I.L.M. 876 [hereinafter Rio Declaration].

8. *See* Advisory Opinion Namibia, 1971 I.C.J. 16 .

9. *Trail Smelter*, *REPORT OF THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT*, 11 I.L.M. 1416 (June 16, 1972) [hereinafter Stockholm Declaration].

10. United States v. Canada, 3 R.I.A.A. 1907 (1941). *See also* Nuclear Tests (Austl. v. Fr.), 1974 I.C.J. 253, 389 (dissenting opinion of Judge de Castro).

11. G.A. Res. 1629 (XVI) (1961). *See also* G.A. Res. 2849 (XXVI), para. 4(a) (1972).

been accepted in international treaties[12] as well as in other international practices.[13]

Moreover, in the case of shared resources, this is a resource which does not fall as a whole within the jurisdiction of one state; the primary concept is the obligation for equitable and harmonious utilization of the resource.[14] This obligation is primarily related to cooperation on the basis of a system of information and prior consultation and notification in order to achieve optimum use of such resources without causing damage to the legitimate interests of other states.[15]

In those areas beyond the limits of national jurisdiction, such as the high seas, the applicable concept is not one of sovereignty, but is one of common heritage of humanity. Simply stated, global property is open and its wealth cannot be appropriated by states. States are only administrators of the property's wealth and benefits.[16] States must cooperate in the conservation and share the economic benefits of those areas.[17] Recently,

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12. Food and Agriculture Organization International Plant Protection Convention, Dec. 6, 1951, pmbl., 150 U.N.T.S. 68; Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, Aug. 5, 1963, art. I(1)(b), 480 U.N.T.S. 43; African Convention on the Conservation of Nature and Natural Resource, Sept. 15, 1968, 4 U.N.T.S. 1001; UNESCO on Heritage, *supra* note 6, at art. 16(1)(b); Treaty for Amazonian Co-operation, July 3, 1978, art. IV, 17 I.L.M. 1045; Convention for the Protection of the Maritime Environment and Coastal Area of the South-East Pacific, Nov. 12, 1981, art. 3(5), International Environmental Legal Materials and Treaties 337; Association of South East Asian Nations Agreement on the Conservation of Nature and Natural Resources, July 1985, art. 20, 24 I.L.M. 1142; United Nations Convention on the Law of the Sea, Dec. 10, 1982, art. 193, 21 I.L.M. 1261 [hereinafter Law of the Sea]. This last convention states that the obligation to prevent environmental harm is not only a negative obligation; there should also be positive action towards environmental protection.

13. *See generally* G.A. Res. 2996 (XXVII) (1972); Charter of Economic Rights and Duties of States, G.A. Res. 3281, art. 30 (1974); 1975 Final Act of the Helsinki Conference on Security and Cooperation in Europe, 14 I.L.M. 1292.

14. *See, e.g.*, Helsinki Rules on the Uses of the Waters of International Rivers, Aug. 1966, *in* REPORT OF THE FIFTY-SECOND CONFERENCE OF THE INTERNATIONAL LAW ASSOCIATION 484 (1967).

15. *See, e.g.*, G.A. Res. 3281, *supra* note 13, at ch. II, art. 3.

16. *See generally* A. KISS, *Droit International de l'environnement*, Paris, 1989; *Nouvelles tendences en Droit Internationel de l'environnement*, Y.B. INT'L L. (Dunker and Humboldt, Berlin eds., 1990).

17. *See* Law of the Sea, *supra* note 12, at arts. 136, 137, 140, 21 I.L.M. 1261; Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 610 U.N.T.S. 205 [hereinafter Treaty on Exploration and Use of Space].

the concept of common heritage of humankind has been applied to the protection of Antarctica.[18]

II. PRINCIPLES OF GOOD NEIGHBORLINESS AND INTERNATIONAL COOPERATION

The principle of good neighborliness places on states a responsibility not to damage the environment. The principle of international cooperation places an obligation on states to prohibit activities within the state's territory that are contrary to the rights of other states and which could harm other states or their inhabitants.[19] This is considered to be an application of the maxim *sic utere tuo, et alienum non laedas*.[20]

The principle of good neighborliness is closely related to the duty to cooperate in investigating, identifying, and avoiding environmental harm. Most international environmental treaties have provisions requiring cooperation in the generation and exchange of scientific, technical, socioeconomic, and commercial information.[21] This obligation to cooperate is not absolute. Instead, it is limited by municipal conditions such as the protection of patents.[22]

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18. Protocol to the Environmental Protection to the Antarctic Treaty, Oct. 4, 1990, 30 I.L.M. 1461 (1991) (not in force). The concept of common heritage of humankind has been useful. Nevertheless, it provides a less compelling conceptual background for regulating such issues as the greenhouse effect and biodiversity protection. Therefore, another concept has evolved, the one of common concern of humankind. It has not been defined yet, and I believe it will never be defined. It is its vacuity which has made possible international regulation for activities that otherwise would fall under the internal jurisdiction of states.

19. International cooperation was dictated by the International Court of Justice in Corfu Channel (U.K. v. Alb.), 1949 I.C.J. (April 22). *See also* Lac Lanoux Arbitration (Spain v. Fr.), 12 R.I.A.A. 285 (Arbitral Tribunal affirmed "France is entitled to exercise her rights; she cannot ignore the Spanish interests."). Island of Palmas (U.S. v. Neth.), 11 R.I.A.A. 829; Alabama Claims Arbitration, 7; J. MOORE, DIGEST OF INTERNATIONAL LAW 1059-67; AMERICAN MEXICAN CLAIMS COMMISSION, TEXAS CATTLE CLAIMS REPORT TO THE SECRETARY OF STATE 51; United States v. Arjona, 120 U.S. 479 (1887); H. KELSEN, PRINCIPLES OF INTERNATIONAL LAW 96, 205-06 (1966).

20. The maxim was invoked as a rule by Hungary in the Gabcikovo-Nagymaros Project (Hung. v. Slovk.), 1992 I.C.J. 32. Hungary supported its submission in *Corfu Channel*; Stockholm Declaration, *supra* note 9; Rio Declaration, *supra* note 7, and the INTERNATIONAL LAW COMMISSION DRAFT ARTICLES ON STATE RESPONSIBILITY (1990).

21. *See* Law of the Sea, *supra* note 12, at art. 200; U.N. Convention on Biological Diversity, *supra* note 6, at art. 17; Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Mar. 17, 1992, art. 8, 31 I.L.M. 1312; Convention for the Protection of the Ozone Layer, Mar. 22, 1985, art. 4, 26 I.L.M 1517 [hereinafter Ozone Protection Convention].

22. *See* Ozone Protection Convention, *supra* note 21, at art. 4; 26 I.L.M. at 1530-32; Law of the Sea, *supra* note 12, at art. 17.

The exchange of general information is critical in monitoring the domestic implementation of international obligations. For example, a cooperative exchange of information regarding the trade of endangered wildlife is critical in tracing the population flow of animals.[23] The same occurs with greenhouse effect emissions.[24] Due to the importance of exchanging information, some conventions have created separate international bodies with information generating and distribution functions.[25] Additionally, many conventions contain provisions dealing with scientific knowledge,[26] atmospheric changes,[27] marine pollution,[28] and cultural preservation.[29]

Other subprinciples embodied in good neighborliness and international cooperation are the principles of prior notification and consultation. Prior notification obligates acting states to provide prior, timely notification and relevant information to every state that may be adversely affected by its environmental activities.[30] Of course, states shall immediately notify other states of any natural disasters or other

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23. *See* Convention on the International Trade in Endangered Species of Wild Life and Flora, Mar.3, 1973, art. 7, 993 U.N.T.S. 243.

24. *See* U.N. Convention on Climate Change, *supra* note 6, at art. 12.

25. *See id.* at art. 9 (discussing the Conference of Parties created to advise on scientific and technological matters).

26. *See generally* Stockholm Declaration, *supra* note 9, at princ. 20; United Nations Environment Programme Governing Council Decision: Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious Utilization of Natural Resources Shared by Two or More States, May 19, 1978, 17 I.L.M. 1091 [hereinafter U.N. Convention on Conserving Shared Natural Resources].

27. *See* U.N. Convention on Climate Change, *supra* note 6, at art. 15; Ozone Protection Convention, *supra* note 21, at art. 3. The Ozone Layer Convention is an important model for rapid reaction to environmental problems. An annex elaborates in great detail those areas needing coordinated scientific research. For example, the potential consequences of increased ultraviolet radiation on human health and the environment. This is a major reason for the success of the parties in the combat against ozone depletion.

28. *See* Law of the Sea, *supra* note 12, at art. 200.

29. *See* UNESCO on Heritage, *supra* note 6.

30. *See* Rio Declaration, *supra* note 7, at princ. 19; Montreal Rules of International Law Applicable to Transfrontier Pollution, Sept. 1982, Report of the Sixtieth Conference of the Int'l L Comm'n 1-3 [hereinafter Montreal Rules on Transfrontier Pollution]; U.N. Convention on Conserving Shared Natural Resources, *supra* note 26, at princ. 6; Law of the Sea, *supra* note 12, at art. 206. Special provisions can protect the disclosure of information as part of the notification requirement. *See, e.g.*, Organization of Economic Cooperation and Development Council Recommendation on Principles Concerning Transfrontier Pollution, Nov. 14, 1974, Annex, 14 I.L.M. 242 [hereinafter OECD Principles Concerning Transfrontier Pollution]; United Nations Environment Programme Governing Council Decision: Guidelines for the Exchange of Information on Chemicals in International Trade, May 1989, art. 11.

emergencies that are likely to produce transboundary effects.[31] Also, notification is particularly important when there is an oil spill,[32] industrial mishap,[33] or nuclear accident.[34]

Moreover, upon request, the acting state is bound to enter into a good faith consultation with potentially affected states over a reasonable period of time.[35] However, the acting state is not bound by the opinions of the consulted states, but should take them into account. Finally, when one state is acting in the territory of another, notification and consultation is not enough. Prior informed consent is required. This consent is mandatory in activities such as transporting hazardous wastes through a state,[36] lending emergency assistance after an accident,[37] and prospecting for genetic resources.[38]

III. PRINCIPLE OF PREVENTIVE ACTION

The pollution prevention principle should be differentiated from the duty to avoid environmental harm. Under this new rule, a state may be under the obligation to prevent damage within its own jurisdiction.[39] Therefore, the discharge of toxic substances in such quantities or concentrations which exceed the capacity of the environment's degradation capacity, must be halted in order to ensure that serious or irreversible

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31. Rio Declaration, *supra* note 7, at princ. 18.

32. International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 12 I.L.M. 1319, 1434 (not in force).

33. Council Directive 82/501, art. 5, 1982 O.J.

34. United Nations Convention on Early Notification of Nuclear Accidents, Sept. 26, 1986, 25 I.L.M. 1377.

35. *See* Montreal Rules on Transfrontier Pollution, *supra* note 30, at art. 8; U.N. Convention on Conserving Shared Natural Resources, *supra* note 26, at princ. 6-7; OECD Principles Concerning Transfrontier Pollution, *supra* note 30, at princ. 7; Nordic Convention on the Protection of the Environment, Feb. 19, 1974, 13 I.L.M. 511.

36. Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal, Mar. 1989, art. 6(4), 28 I.L.M. 649; Organization of African Unity: Bamako Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa, Jan. 29, 1991, art. 6, 30 I.L.M. 773, 785.

37. There is not an affirmative general obligation to provide emergency assistance if the helping state is not responsible for the damage. Nevertheless, assistance to the territory of the affected state has been stated in international instruments. *See, e.g.*, Convention in Assistance in the Case of a Nuclear Accident or Radiological Emergency, Sept. 26, 1986, art. 2, 25 I.L.M. 1377; Rio Declaration, *supra* note 7, at princ. 18; Law of the Sea, *supra* note 12, at art. 199; U.N. Convention on Conserving Shared Natural Resources, *supra* note 26, at princ. 9(3).

38. U.N. Convention on Biological Diversity, *supra* note 6, at art. 15(5).

39. *See* JUDGE N. SINGH, *Foreword* TO ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT: LEGAL PRINCIPLES AND RECOMMENDATIONS xi-xii (1986).

damage is not inflicted upon ecosystems.[40] Action should be taken at an early stage to reduce pollution, rather than waiting to restore contaminated areas.

To ensure this principle, states have established authorization procedures, commitments to environmental standards, ways to access information, the use of penalties, and the need to carry out environmental impact assessments.[41] For example, environmental impact assessments have been incorporated as a decision-making instrument by international organizations[42] as well as in many conventions.[43] The preventive principle has been supported by international instruments preventing the introduction of pollutants,[44] and also by agreements in the field of international economic law.[45] Finally, it has also been endorsed by international case law.[46]

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40. *See* Stockholm Declaration, *supra* note 20, at princ. 6. The preventive principle can be traced to 1933 with the Convention Relative to the Preservation of Fauna and Flora in their Natural State, *supra* note 6, which was framed to prevent the extinction of species of fauna and flora.

41. The environmental impact assessment is a procedure for examining, analyzing, and assessing proposed activities, prior to a decision, in order to minimize adverse effects. It involves governmental authorities, and when appropriate, public participation in the procedures.

42. *See also* World Bank Operational Directive 4.01 (1991); 1 WORLD BANK ENVIRONMENTAL SOURCEBOOK 1990.

43. Rio Declaration, *supra* note 7, at princ. 17; Convention on the Regulation of Antarctic Mineral Resource Activities, Jan. 29, 1988, arts. 37(7)(d)-(e), 39(2)(c), 54(3)(b), 27 I.L.M. 68, princ. 11(c) [hereinafter Convention on Antarctic Minerals]; U.N. Convention on Biological Diversity, *supra* note 6, at art. 14.

44. *See generally* Convention for the Prevention of Marine Pollution from Land-Based Sources, Mar. 22, 1974, 13 I.L.M. 546; Convention on the Protection of the Mediterranean Sea Against Pollution, Feb. 15, 1976, 15 I.L.M. 290; Convention on the Protection and Use of Transboundary Watercourses and International Lakes, *supra* note 21; Convention on the Protection of the Alps, Nov. 7, 1991, 31 I.L.M. 767 (not in force). *See also* International Convention for the Prevention of Pollution of the Sea by Oil, May 12, 1954, 327 U.N.T.S. 3, pmbl.; Convention on the High Seas, Apr. 29, 1958, 450 U.N.T.S. 82, art. 25; Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, Feb. 15, 1972, 932 U.N.T.S. 3, art. 1; Law of the Sea, *supra* note 12, at art. 194(1); Convention Concerning Fishing in the Waters of the Danube, Jan. 29, 1958, 339 U.N.T.S. 23, at art. 7; Treaty Banning Nuclear Tests in the Atmosphere, in Outer Space and Underwater, *supra* note 12, at art. 1(1); Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, 18 I.L.M. 1442, art. 2; Convention for the Protection of Natural Resources and the Environment of the South Pacific Region, Nov. 25, 1986, 26 I.L.M. 38, art. 5(1).

45. African, Caribbean and Pacific States-European Economic Community: Fourth Lomé Convention, Dec. 15, 1989, 29 I.L.M. 783, art. 35 (not in force); Treaty on European Union, Feb. 7, 1992, art. 130r(2), 31 I.L.M. 247.

46. *See* Certain Phosphate Lands in Nauru (Nauru v. Aus.), 1992 I.C.J. 240, 244.

IV. PRECAUTIONARY PRINCIPLE

This rule, although still evolving, is reflected in principle fifteen of the Rio Declaration, which states that where there are warnings of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.[47] Since scientific certainty often comes too late for politicians and lawyers to protect against environmental danger, the burden of proof is switched. To wait for scientific proof regarding the impact of pollutants discharged into the environment could result in irreversible damage to the environment and human suffering. Traditionally, states wishing to adopt certain protective measures had to prove beyond a doubt the hazard and the urgency of the desired action.[48] Fortunately, because of the precautionary principle, this traditional view of burden of proof was reversed so that a state would not have to wait for proof of harm before taking action. Another possible interpretation of the shift in the burden of proof is that states wishing to undertake certain activities will have to prove that the activities will not cause harm to the environment.[49]

The first treaty to embody this principle is the 1985 Vienna Convention for the Protection of the Ozone Layer.[50] Subsequently, the precautionary approach for the protection of the environment has been widely addressed.[51] Regrettably, there exists no precision as to the principle's requirements, and its formulations vary. What remains ambiguous is the level at which the lack of scientific evidence can not be claimed as an argument to postpone measures.

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47. Rio Declaration, *supra* note 7, at princ. 15.

48. *See, e.g.*, Convention for the Prevention of Marine Pollution from Land-Based Sources, *supra* note 44, at art. 4(4).

49. This interpretation has been adopted in the Convention for the Protection of the Marine Environment of the North-East Atlantic, Sept. 22, 1992, 32 I.L.M. 1069, Annex II, art. 3(3)(c). Under this agreement, the parties have to report the results of scientific studies which show that any dumping operations of radioactive wastes would not result in hazards to humans, living resources, and other uses of the sea. *Id.*

50. *See* Ozone Protection Convention, supra note 21, at pmbl.

51. *See id.* at art. 2(2)(a); Convention for the Protection of the Marine Environment of the Baltic Sea Area, Apr. 1992, 30 I.L.M. (1992) (not in force); Ministerial Declaration of the International Conference on the Protection of the North Sea, Bremen, Nov. 1, 1984; Ministerial Declaration of the Second North Sea Conference, London, Nov. 25, 1987; Third North Sea Conference, The Hague, Mar. 8, 1990; Ministerial Declaration on Sustainable Development in the European Economic Community Region, Bergen, May 16, 1990; Convention on the Ban of Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, *supra* note 36, at art. 4(3)(f).

When can a preventive action be legally required? While the 1991 Bamako Convention[52] links the preventive and precautionary principles and does not require the possibility of damage to be serious (lowering the level at which the lack of scientific evidence launches action),[53] the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic[54] increases the threshold needed to implement preventive measures,[55] requiring more than a mere possibility of damage.

V. THE DUTY TO COMPENSATE FOR HARM

States are responsible to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or areas beyond the limits of their national jurisdiction. Injuries result from violations of this generally accepted rule.[56] Any state responsible for a violation of international law has to stop the wrongful conduct and re-establish the condition that existed prior to the wrongful conduct. If it is impossible to re-establish the pre-existing condition, the state should provide compensation.[57] An illegal or wrongful act exists where: a) conduct consists of an action or omission imputed to a state under international law; and b) such conduct constitutes a breach of an international obligation of the state.[58] This definition poses three problems

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52. Organization of African Unity: Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Waste Within Africa, Jan. 29, 1991, 30 I.L.M. 773.

53. According to the art. 4(3)(f) of the Bamako Convention, parties have to adopt and implement "the preventive, precautionary approach to pollution which entails, *inter alia*, preventing the release into the environment of substances which may cause harm to humans or the environment without waiting for scientific proof regarding such harm." *Id.* This formulation also links the preventive and precautionary approaches.

54. Convention for the Protection of the Marine Environment of the North - East Atlantic, *supra* note 49.

55. According to art. 2(2)(a) of the Convention for the Protection of the Marine Environment of the North - East Atlantic, preventive 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 the effects." Convention for the Protection of the Marine Environment of the North East Atlantic, *supra* note 49. This Agreement also links the preventive and precautionary approaches.

56. *See* Stockholm Declaration, *supra* note 20, at princ. 21; Rio Declaration, *supra* note 7, at princ. 2.

57. R. Wolfrum, *Reparation for International Wrongful Acts*, ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 352; *See also* Certain German Interests in Polish Upper Silesia (the so - called Factory at Chorzow case) (F.R.G. v. Pol.), 1928 P.C.I.J. (ser. A) No. 17, at 377 (Sept. 13); RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 901 (1986).

58. *Draft Articles on State Responsibility*, [1980] 2 Y.B. Int'l L. Comm'n 30-4.

in relation to international environmental law. First, what is the criteria for imputing liability to a state? Second, what is the definition of environmental damage? Third, what is the appropriate form of reparation?

With regards to the first question, there are three options: fault (negligence), strict liability (there is a presumption of responsibility but defenses are available),[59] and absolute liability (no cause of justification is possible, and a state would be liable even for an act of God). While fault is based on due diligence, strict and absolute liability impose responsibility for acts not prohibited under international law. Strict liability emphasizes the harm rather than the conduct.

It is a widespread opinion that international law lacks absolute or strict liability as a general rule.[60] There is no single basis of international responsibility applicable in all circumstances, but rather several, the nature of which depends upon the particular obligation in question.[61] Therefore, international law is not conclusive on the standard of care to be shown in the fulfillment of environmental obligations. For example, strict liability for ultra-hazardous activities can be considered a general principle of law since it is found in municipal legislation worldwide.[62] Some treaties even support absolute liability for these activities.[63] However, strict or absolute liability is more difficult to impute for activities that are not ultra-hazardous.[64] It should also be considered that the damage can be produced directly by state organs, by private individuals within the territory,[65] or in the execution of lawful measures.[66]

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59. I. Brownlie, *System of the Law of Nations, State Responsibility*, Part I, at 44 (1983). *See also,* The Corfu Channel Case, 1949 I.C.J. 4, 85-86 (April 9) (Azevedo, J., dissenting).

60. M. SORENSEN, MANUAL OF INTERNATIONAL LAW 539 (1968).

61. 1 L. OPPENHEIM, INTERNATIONAL LAW 509 (1955).

62. 11 A. TUNC, INTERNATIONAL ENCYCLOPEDIA OF COMPARATIVE LAW chap. V.

63. *See* Convention on International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 961 U.N.T.S. 187, art II.

64. Some conventions contain exculpatory provisions for *force majeure* (a state is involuntarily placed in a situation which makes it materially impossible to adopt a conduct in conformity with international obligations) and distress (conformity with the obligation is possible but would result in loss of life). *See, e.g.*, Law of the Sea, *supra* note 12, at art. 18(2), 39(1)(e); International Convention for the Prevention of Pollution of the Sea by Oil, *supra* note 44, at art. V.

65. *See* British Property in Spanish Morocco, 2 R.I.A.A. 642 (1925), where the arbitrator Max Huber, on the damage caused by private individuals to British property in Spanish Morocco, declared that "a state is obliged to exercise certain vigilance . . . ."

66. For example, Italian property was sequestered in Tunisia by the French Government after Italy's defeat in World War II: Case Comment, *In re* Rizzo, 22 INT'L L. REV. 322 (1955). The Conciliation Commission said: "the act contrary to international law is not the measure of

As to the second question, environmental damage should be defined as a result of a violation of international law. This presents a dilemma since customary international law is still emerging and some environmental treaties rely heavily on voluntary cooperation. In addition, environmental damage has been defined as any injury to natural resources as well as[67] degradation of natural resources, property,[68] landscape, and environmental amenities.[69]

Finally, focusing on reparation, the Permanent Court of Justice declared:

> The essential principle contained in the actual notion of an illegal act . . . is that reparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed. Restitution in kind, or if it is not possible, payment of a sum corresponding to the values which a restitution in kind would bear; the award, if need be, of damages for loss sustained which would not be covered by restitution in kind or payment in place of it - such are the principles which should serve to determine the amount of compensation due for an act contrary to international law.[70]

The problem is that at the environmental level, an identical reconstruction may not be possible. An extinct species cannot be replaced. However, at the very least, the goal should be to clean-up the environment and restore it so that it may serve its primary functions. But, even if restoration is physically possible, it may not be economically feasible. Moreover, restoring an environment to the state it was in before the damage could involve costs disproportionate to the desired results. Such elements, combined with the lack of legal precedent and the insufficiency of the traditional state's inability to assess environmental damage, makes the panorama difficult.[71]

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sequestration, but an alleged lack of diligence on the part of the French State . . . in the execution of the said measure." *Id.*

67. *See generally* Convention on Antarctic Minerals, *supra* note 43.

68. *Draft Articles on State Responsibility, supra* note 58, at art. 24.

69. *See generally* Convention on Civil Liability for Damage Resulting From Activities Dangerous to the Environment, June 21, 1993, 32 I.L.M. 1228.

70. *See* Certain German Interests in Polish Upper Silesia (F.R.G. v. Pol.), 1928 P.C.I.J. (ser. A) No. 17, at 377 (Sept. 13).

71. *See* Communication from the European Community Commission to the European Community Council and European Parliament on Environmental Liability, p. 32 (1993).

VI. PRINCIPLE OF COMMON BUT DIFFERENTIATED RESPONSIBILITY

The protection of the environment is a common challenge to all countries. Due to different development paths and the need to share in the responsibility for ecological degradation, some countries may be asked to carry more of the burden of conservation. The idea is that states should comply with international obligations for the conservation of the environment on the basis of equity and in accordance with their common but differentiated responsibilities and respective capacities. This principle was acknowledged in the *Rio Declaration* at principles four and seven.

This principle includes two constituent elements. The first is the common responsibility of states for the protection of the environment.[72] This signifies that states should participate in the world effort for conservation. The second element is the elucidation of the different circumstances of states.[73] For example, industrialized countries have contributed more to the global warming than underdeveloped countries. On the other hand, the capacities of developing countries to prevent damage may be less advanced. Also, the environmental policies of states should enhance and not affect the present and future development of developing countries.[74] While all states are bound to participate in the environmental solution, the adoption of national standards and international obligations can differ. For example, the time period for the national implementation of preventive measures can vary from country to country.[75]

VII. THE PRINCIPLE OF SUSTAINABLE DEVELOPMENT

The principle of sustainable development was defined by the 1987 Brundtland Report[76] as a development that meets the needs (in particular the essential needs of the world's poor) of the present without

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72. *See* Convention for the Establishment of an Inter-American Tropical Tuna Commission, May 31, 1949, 80 U.N.T.S. 72, at pmbl.; Rasmar Convention on Wetlands, *supra* note 6, at pmbl.; UNESCO on Heritage, *supra* note 6, at pmbl.; Treaty on Exploration and Use of Space, *supra* note 17, at art. 1; G.A. Res. 43/53 (1988), 44/207 (1989), 45/212 (1990).

73. *See* Stockholm Declaration, *supra* note 9, at princ. 23; Rio Declaration, *supra* note 7, at princs. 11, 6; Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan), March 28, 1981, art. 4(1), 20 I.L.M. 746; U.N. Convention on Climate Change, *supra* note 6, at pmbl.; Ozone Protection Convention, *supra* note 21, at art. 2(2); Law of the Sea, *supra* note 12, at art. 207.

74. *See* G.A. Res. 3281, *supra* note 13, at art. 30.

75. *See* Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, art. 5(1), 26 I.L.M. 1541 (which entitles the developing countries to delay their compliance with control measures if some requirements are met).

76. Report of the World Commission on Environment and Development (the Brundtland Report).

compromising the ability of future generations to meet their own needs. It imposes the idea of limitations on the environment's capacity to meet present and futures needs.[77]

Sustainable development prompts that the primary focus of environmental protection efforts is to improve the human condition.[78] According to the anthropocentric approach, the protection of wildlife and natural resources is not a goal in itself, but is a necessity for ensuring a higher quality of life for humans.

Sustainable development, as reflected in international agreements, encompasses at least three elements:

A. Intergenerational Equity.

Intergenerational equity is each generation's responsibility to leave an inheritance of wealth no less than what they themselves have inherited. The present generation holds the natural resources in trust for future generations.[79] Early[80] and recent[81] treaties have referred to this principle.

B. Sustainable Use of Natural Resources.

The primary roots of the principle of sustainable use of natural resources can be traced to 1893, when the United States proclaimed a right to ensure the proper use of seals in order to save them from destruction.[82] The term has been used in conservation conventions.[83]

While attempts to define the principle of sustainable use of natural resources have been made, no general definition exists. Terms such as

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77. *Id.*; *Our Common Future*, 43 (1987).

78. *See* Rio Declaration, *supra* note 7, at princ. 1.

79. E. Brown Weiss, *Our Rights and Obligations to Future Generations for the Environment*, 84 AM. J. INT'L L. 198 (1990).

80. *See* International Convention for the Regulation of Whaling, Dec. 2, 1946, 161 U.N.T.S. 72, pmbl.; African Convention on the Conservation of Nature and Natural Resource, *supra* note 12, at pmbl.

81. Convention on International Trade of Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, 993 U.N.T.S. 243, pmbl.; U.N. Convention on Climate Change, *supra* note 6, at art. 3(1); U.N. Convention on Biological Diversity, *supra* note 6, at pmbl.

82. Bering Sea Fur Seals Fisheries Arbitration (Gr. Brit. v. U.S.), *reprinted in* J. MOORE., INTERNATIONAL ARBITRATIONS 755 (1893); *see also* Fisheries Jurisdiction (U.K. v. Ice.) 1974 I.C.J. 34-35, where the obligation to cooperate in the conservation and sustainable utilization of global commons, including living resources on the high seas, was upheld.

83. Agreement on the Action Plan for the Environmentally Sound Management of the Common Zambezi River System, May 28, 1987, 27 I.L.M. 1109, pmbl.; U.N. Convention on Biological Diversity, *supra* note 6, at arts. 1, 8, 11, 12, 16-18; U.N. Convention on Climate Change, *supra* note 6, at art. 3(4).

proper,[84] wise use,[85] judicious exploitation,[86] sound environmental management,[87] ecologically sound, and rational use[88] are used interchangeably without definitions.

C. *Integration of environment and development.*

"In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."[89] Therefore, when implementing environmental obligations, economical and social development should be taken into consideration, and vice versa.

Although traditionally international organizations such as the World Bank or the World Trade Organization never addressed environmental protection, a change is slowly coming.[90] Regarding macroeconomics, the move towards sustainable development requires, for example, new accounting systems to evaluate a country's progress. The accounting system would include pollution control efforts and environmental damage when calculating the gross national product (GNP). Mining extraction, for example, would not simply reflect an increase in the GNP, but also a reduction in natural resources.[91] In microeconomics, sustainable development would require, for example, imposition of the costs of environmental damage on the state which caused the damage.[92]

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84. FAO Agreement for the Establishment of a General Fisheries Council for the Mediterranean, Sept. 24, 1949, 126 U.N.T.S. 237, art. IV(a).

85. Convention on the Conservation of Migratory Species of Wild Animals, June 22, 1979, pmbl., 19 I.L.M. 15 (1980).

86. Act Regarding Navigation and Economic Co-operation between the States of the Niger Basin, Oct. 1963, pmbl., 587 U.N.T.S. 9.

87. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Mar. 24, 1983, art. 4(1), 22 I.L.M. 221.

88. UN/ECE Convention on the Transboundary Effects of Industrial Accidents, Mar. 17, 1992, art.2(2)(b), 31 I.L.M. 1333.

89. *See* Rio Declaration, *supra* note 7, at princ. 4.

90. *See* E. Iglesias, *El papel de los organismos multilaterales de cooperación en el desarrollo sostenible: el caso de BID*, 20 REVISTA DE CIENCIAS SOCIALES IBEROAMERICANAS DE LA ASOCIACIÓN DE INVESTIGACIÓN Y ESPECIALIZACIÓN SOBRE TEMAS IBEROAMERICANOS 147-57 (1993).

91. *See generally* STATISTICAL OFFICE OF THE UNITED NATIONS, DRAFT HANDBOOK ON INTEGRATED ENVIRONMENTAL AND ECONOMIC ACCOUNTING (1992).

92. This is the polluter pays principle, which implies that the polluter should bear the expenses of carrying out pollution prevention measures or paying for damage caused because the environmental costs of production were not internalized.

The integration of environment and development can be traced to the 1949 United Nations Conference on Conservation and Utilization of Resources,[93] which recognized the need for "continuous development and wide-spread application of the techniques of resource conservation and utilization."[94] Regional[95] and global[96] treaties are also taken into consideration under this approach.

VIII. CONCLUSION

The legal meaning and consequences of the above stated principles remain open. Some have evolved over a short period of time and sometimes in different contexts. Additionally, state practice is also evolving. Another element which complicates the environmental field is that some of the principles have no definite meaning. There is also no agreement concerning the legal consequences of these rules. Together, this makes it difficult to compel the international community to protect the environment.

The rules of permanent sovereignty over natural resources, the responsibility to prevent environmental damage, good neighborliness, and cooperation in relation to environmental protection are well established and rooted in state practice and international instruments. Even more, permanent sovereignty can be regarded as customary international law.

On the other hand, the duty to compensate for environmental harm can be considered a corollary of the general duty to compensate for damages provoked by international wrongful acts. Nevertheless, the difficulty to assess the environmental damage within the existing liability rules makes the application of the rules problematic. Also, there is no agreement as to the applicable type of responsibility (subjective or objective). Notwithstanding, the trend is to avoid these vague notions and define the state-required conduct necessary to prevent harm to other states. Therefore, the obligation to avoid environmental harm would be stated as an obligation to take certain measures to ensure that activities within the control of the state conform to international environmental protection

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93. United Nations Conference on Conservation and Utilization of Resources.

94. U.N. Res. 32(IV), Environmental and Social Council, pmbl. (1947).

95. *See* Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution, Apr. 24, 1978, 1140 U.N.T.S. 133; Treaty for Amazonian Co-operation, *supra* note 12.

96. U.N. Convention on Climate Change, *supra* note 6; Convention on Biological Diversity, *supra* note 6, at pmbl.

standards. These rules of conduct will be the rules used to decide whether an agreement has been violated.[97]

Preventive action and precautionary and sustainable development principles are more difficult to uphold, since they are rather new and vague concepts. However, they deserve attention, since they will undoubtedly shape the future development of international law. For example, if the principle of sustainable development quickly takes root in the international law regime, all developmental decisions could be subjected to environmental inquiry.

Finally, the influence of international litigation should not be underestimated.[98] The decision of international tribunals such as the European Court of Justice (granted supra national adjudicative power within the European Community)[99] and the International Court of Justice[100] on environmental matters, will contribute to the codification of these principles.

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97. *See* L. HENKIN ET AL., *supra* note 3, at 529.

98. *But see* Z. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW AND SOCIETY 1007 (1992).

99. P. SANDS, EUROPEAN COMMUNITY ENVIRONMENTAL LAW: LEGISLATION AND THE EUROPEAN COURT OF JUSTICE (1991) (noting several recent cases strongly affirming environmental principles in interpretations of European legislation).

100. In July 1993, the court decided to establish a seven member Chamber on Environmental Matters in view of the developments in the field of environmental law and protection which had taken place in the past few years.