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FOREWORD

Hon'ble Justice U.C. Banerjee
Former Judge, Supreme Court of India,
Founder Chancellor, NALSAR
& Patron, ELPR

Environment provides basic resources for virtually all socio-economic activity in the world, it consists of natural habitats, plants and animals that today form an irreplaceable global heritage. In sustainable use of natural resources and balancing of biological and developmental concerns lies the solution for substantive poverty alleviation. It follows therefore that the major thrust should be on development of environmental acumen for protection of the natural living space of humankind and integration of environmental realities in making decisions on all economic issues and activities. Same is not possible without prevalence of an enriched environmental jurisprudence and regulatory framework

Therefore in such a dynamic setup significance of this law journal enhances many folds. No serious research scholar could offer not to consult the literature in this journal which touches upon issues of the most pressing nature being faced today by not only national decision makers but also the international community at large.

I am confident that ELPR would thus invite attention of legal scholars and experts from around the globe. I convey my congratulations to the Editorial Board and Prof. Veer Singh for all their effort in brining out the inaugural issue of Environmental Law & Practice Review in such a good shape.

Justice U. C. Banerjee

EDITORIAL

Environmental Law in India, being an emerging field attracting cross disciplinary studies, like in many other countries poses a challenge to established notions of a legal system. The hurdles that India has encountered in this regard can be divided into three generations; all of which are very different from each other.

The first generation dealt with the difficulty of bringing the whole ambit of environmental law into the domain of the existing realm, redirecting certain existing laws with different objectives and developing governance structures and systems, etc. Second generation of difficulties consisted of interpretation issues, political, social and economic compromises, molding Indian industrial development, developing infrastructure to adopt eco friendly technology, implementing our international obligations through national legislations and creating awareness across sections. Third generation difficulties arose due to pressures created from the implementation hurdles of second generation changes and are a relatively new phenomenon across the country and internationally.

We in this editorial, of a journal that have been started to further dialogue and discussion on both contemporary and established issues in environmental law and policy, would like to discuss the difficulties and the jurisprudential tangles that have emerged in the rough generation categorization made by me.

The answer to the first generation difficulties can be said to be enactment of various national legislations [Such as Water (Prevention and Control of Pollution) Act, 1974; Air (Prevention and Control of Pollution) Act, 1981; Wild Life Protection Act, 1972; Forest (Conservation) Act, 1980]. Though legislations on the subject matter existed earlier they were not fully informed by our present environmental ethic. For the purposes of the discussion to take the Indian Forest Act, 1927 as a case in point, considered forests as solely revenue generating State managed resource thereby undermining its environmental value and consequently the need for its conservation. Other kinds of first generation questions hovered around regulatory issues and which government department or ministry was to handle environment issues, thereby resulting in the evolution of Ministry of Environment and Forests [MoEF] along with its ministerial requirements of departments etc.

Further, some jurisprudential questions from the first generational developments were whether environmental violation should be considered a

civil wrong or a crime, whether market based remedies are better than command and control regime, can eco system be conserved rather than specific components of eco system etc. A conclusive solution of such questions and many more has not been reached till date.

The answer to second generational difficulties included adopting the polluter pay principle, precautionary principle etc. as a part of law of the land; thereby enhancing the scope of legislation making from mere pollution control to its environmental protection. A single most momentous legislation in this regard has been the enacting of Environment (Protection) Act, 1986. There are other such legislations which regulate vehicular emissions and noise pollution etc. by developing guidelines and regulations for various stake holders; evolving rules and notifications to regulate waste, coastal zones, conduct of impact assessment etc. The Supreme Court adopting a pro environment stand in such years and closing industries, defining the right to life as including right to environment etc too exemplifies the paradigm change in which environmental law was understood from the first to the second generation.

Some unanswered jurisprudential questions that emerged from the second generation of development were why an extensive over reaching laws such as impact assessment and coastal zone regulation should be in the form of notifications and not by a parliament legislated law, the inability of waste management rules to consider the polluter pays principle in totality, the inherent difficulty of a judicial watchdog at the level of the Supreme Court being created as a first instance court etc.

I am of the opinion that third generation difficulties are stimulated by jurisprudential questions raised by the first and second generation solutions. Decentralization of administrative responsibilities, public participation in decision making, developing market intensive strategies, evolving different interpretations to hither to established principles etc. marked the pattern of answers to the third generation difficulties. An example of this thesis can be found in Environment Impact Assessment Notification, 2006.

The 2006 Notification superseded all existing notifications and all amendments made to it from time to time hereto. The new Notification gives more preference theoretically for public participation in decision making. Though as a note of caution, it is my view that in practice such is not the case; hence the stated problem still thrives and flourishes. To appreciate and understand my thesis fully, I would highlight one jurisprudential question that can be raised from the answer to the third

generation difficulties. I intend to look at the land ownership concept in the context of The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

Legally speaking, ownership generally encompasses certain characteristics and in the context of land ownership they can be stated as:

1) Right to consume, destroy or alienate the land owned, i.e. owner may plant fruit bearing plants or leave it uncultivated or do not bother to maintain record of ownership which in the long run may ruin his rights or may alienate to others by way of sale, gift etc.
2) Right to use and enjoy and land owned, i.e. owner may construct a house and live in it, or cultivate the land , develop drip irrigation facility, build resorts and make money out of it etc.
3) Right to possess the land owned i.e. owner may let out a portion or give on lease but the right to regain possession shall vest with owner so it is not the actual possession that matters but the right to possess matters to determine ownership.
4) Indeterminate duration and perpetual interest i.e. owner may retain ownership until death or sell it, once the sale takes place the buyer becomes owner and the buyer exercises same rights. So these rights remain perpetually, but with whom and how long are indeterminate as it depends on the owner when the intention of dispossession actually materializes.
5) Residuary character, i.e. owner rights are subject to rights of tenants however the residuary rights if any lies with owner and does not go with tenancy.

Owner may acquire the land in any one of the following mode:

1) Sale (Buyer becomes owner; buyer may be individual, firm, government etc.)
2) Inheritance (Heirs of deceased becomes owner in accordance with the applicable law such as Hindu Succession Act, 1956 etc.)
3) Succession (Successors of deceased becomes owner by will etc. with applicable law such as Hindu Succession Act, 1956 etc.)
4) Mortgage (Mortgagor unable to pay debt and mortgagee as secured creditor becomes owner with applicable law such as Transfer of Property Act, 1882 etc.)
5) Principle of Eminent domain (Land Acquisition Act, Urban Development Authority Act etc. which empower government to

acquire land irrespective of the intention of the owner in the interest of larger public and thus becomes owner)

6) Adverse possession (Tenancy Laws which empower the tenant in case of long undisturbed tenancy to become owner etc)
7) Land ceiling (Government may take over land of its citizens or corporation etc. if the extent is beyond the prescribed limit under urban land ceiling or agriculture land ceiling law etc thus claiming ownership)
8) Unclaimed land, forest land etc. are deemed to be the Government lands.

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

Given the above background of the theorizing of ownership and rights attendant thereto the Act in discussion projects a very different paradigm of understanding of ownership by undermining its very basics. The Act recognizes the right of forest dwellers over forests for certain aspects such as collecting minor forest produce, residence, settlement for conversion, fishing, pastoral activities etc. The Act provides for the ways to make such claim by individual or a community of forest dwellers who could be tribal or non tribal. The conditions for tribal population to fulfill as forest dwellers are less stringent as opposed to non tribal population. The nature of rights in the legislation requires to be carefully studied, for example certain rights are community rights, certain rights are user based rights etc.

The position of the rights on land of the forest dwellers prior to the enactment of Recognition of Forest Rights Act, 2006 can be summed up looking at the decision of the court in Banwasi Seva Ashram v. State of U.P. and Ors (AIR 1987 SC 374). The Supreme Court accepted a letter written to the Court as writ petition in this case. The main issue to consider related to the claim to land and related rights of the Adivasis living within Dudhi and Robertsganj Tehsils in the District of Mirzapur in Uttar Pradesh. The State Government declared a part of these lands in the two Tehsils as reserved forest as provided under Section 20 of Indian Forest Act, 1927, and in regard to the other areas, notification under Section 4 of the Act was made and proceedings for final declaration of those areas also as reserved forests were undertaken.

Adivasis and other backward people living within the jungle used the forest area as their habitat. They had raised several villages within these two Tehsils and for generations had been using the jungles around for collecting the requirements for their livelihood. The tribal populace had converted certain lands around their villages into cultivable fields and had also been raising crops for their food. These lands too were included in the notified areas and, therefore, attempt of the Adivasis to cultivate these lands too consequently resisted.

Criminal cases for encroachments as also other forest offences were registered and systematic attempt was made to obstruct them from free movement. The Government took steps for throwing them out under the U.P. Public Premises (Eviction of Un authorized Occupants) Act, 1972.

In 1983 Court adjourned the matter to work out a formula under which claims of adivasis or tribals in Dudhi and Robertsganj Tehsils, to the possession of land and to regularisation of such possession may be investigated by a high powered committee with a view to reaching a final decision with regard to such claims. However it was felt that such a committee cannot function until survey and record is available regarding the claims.

The Maheshwar Prasad Committee constituted for the above purpose identified 433 villages lying South of the Kaimur Range of the Mirzapur District to be relevant for the present dispute. Of those 299 were in Dudhi Tehsil and the remaining 134 in Robertsganj Tehsil. The area involved was 9,23,293 acres out of which in respect of 58,937.42 acres notification under Section 20 of the Act has been made declaring the same as reserved forest and in respect of 7,89,086 acres notification under Section 4 of the Act has been made. The Committee in its report pointed out that unauthorized occupation related to roughly 1,82,000 acres. It has also been stated that the Government by notification dated August 5, 1986, has established a special agency for survey and record operations to solve the problems of the claimants in the area and a copy of the notification has also been produced.

While the matter is pending before the Court, Government has decided that a Super Thermal Plant of the National Thermal Power Corporation Limited (for short 'NTPC') would be located in a part of these lands and acquisition proceedings have been initiated. The Court agreed that electricity generation and distribution is a need which must be given importance and allowed the NTPC to acquire land for this purpose. The NTPC has agreed before the Court that it shall strictly follow the policy on

"facilities to be given to land trustees" as placed before the Court in the matter of lands which are subjected to acquisition for its purpose.

Regarding the forest dwellers who claim right over the disputed land can claim their right before the forest settlement officer appointed as per the Indian Forest Act, 1927. An appeal shall lie from the settlement officer to the Additional District Judge specially appointed for these cases. All appeals shall lie from the decision of the settlement officer to the Additional District Judge irrespective of the fact whether the appellant chose to file the appeal or not.

The Supreme Court also made it clear that if the appellate authority finds the claim justified then the State government should honor the claim. The Supreme Court also made it clear that legal aid should be provided by the State Government for the forest dwellers. However the Court declined to determine the maintainability of the claim of the forest dwellers over the forest land.

Jurisprudential questions from the answer to the third generation difficulty:

The land ownership issues have taken a new turn with use based entitlements gaining prominence. Special Economic Zones, Societies, Trusts, land acquisition, recognition of forest rights which are the major issues concerning land ownership today all have changed the understanding of land ownership hitherto.

They tend to provide more user based rights in cases such as that of Special Economic Zones, where right is vested over land for a defined economic activity, similarly forest dwellers right to collect minor forest produce, cultivate etc. are recognized under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

Ownership has utility and owner is free to use the land however the use, as traditionally understood by property jurisprudence does not determine the ownership in such case; however recent developments state that utility determines ownership or interest in land which is a phenomenon which does violence to the concept of ownership itself.

Hindu Law used to mandate that women when she inherit land would own it with limited rights, and this ownership of land can be which can be compared to forest dwellers rights under The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 today. Hindu Succession Act, 1956 abolished such discrimination, but it is

curious why we let live this invidious law by way of the law enacted for forest dwellers.

When it comes to Special Economic Zones it is the government land on which corporates or others are given limited rights. This understanding of limited rights in the context of industrialization can be justified. But extending the same understanding of limited rights to forest dwellers stops short of foolishness as the two cannot be equated in the first place and hence it begs the question if access to land in both cases same and justified? These are questions which need to be examined in the context of access to land on the basis of their utility.

The numbers of jurisprudential questions from each answer to solve an environmental difficulty are so many that the importance of research in environmental law and policy and the role played by journals such as the present volume needs no emphasis. We aim the journal helps to evolve solutions to the difficulties across sectors and takes a small step forward in this regard.

Finally, our special thanks to all the contributors, faculty, students and alumni of NALSAR and all other well-wishers of ELPR.

The Editorial Board, ELPR

IN WHAT WAYS IS THE EMPHASIS ON PUBLIC PARTICIPATION A POSITIVE DEVELOPMENT IN ENVIRONMENTAL LAW? AN ANALYSIS OF THE AARHUS CONVENTION AND ITS IMPACT ON EU ENVIRONMENTAL LAW AND POLICY

Nicola Tilche[*]

ABSTRACT

In order to purposefully evaluate whether the implementation of the Aarhus Convention has brought about positive developments in environmental law and policy at EU level, the following paper shall begin by a theoretical examination of the reasons why public participation has lately received such credence and in what ways it may enhance environmental law. In the light of this discussion, following a short analysis of the main provisions falling within the three interlocking pillars of the Convention, I shall focus on the impacts the commitment to participatory processes has brought forward in EC environmental legislation and institutional practices. Firstly, the discussion shall turn on how the recognized importance of public participation by the EU is contributing to the general shift from substantive "command and control" directives towards more decentralised procedural directives bringing 'decisions closer to the people'.[1] *The focus shall be mainly on the Environmental Impact Assessment Directive as amended,*[2] *and the Water Framework Directive.*[3] *Secondly, the analysis shall turn on the introduction of participatory processes*

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1. Lee, M., *EU Environmental Law: Challenges, Change and Decision-Making*, (2005) at 163.
2. 85/337/EEC as Amended by the Participation Directive 2003/35/EC.
3. 2000/60/EC.

for the public and civil society at EC decision-making level recently formalized in the environmental sphere through the implementation of the Aarhus Convention to EC institutional practices,[4] *and in what ways those processes may truly enhance the accountability and quality of those decisions.*

I.] INTRODUCTION

"..in my course I have known, and, according to my measure, have co-operated with great men; and I have never yet seen any plan which has not been mended by the observations of those who were much inferior in understanding to the person who took the lead in the business".[5]

While environmental problems resulting from industrialisation have increasingly become scientific, political, ethical as well as social priorities at local, national, regional and international level, in the last twenty years in liberal democracies a general consensus has grown around the need for an increased involvement of the public in environmental law and policy. In connection to the notion of sustainable development, already in the Rio Declaration it was held that 'environmental issues are best handled with the participation of all concerned citizens at the relevant level'.[6] The importance attributed to this statement at European level is symbolized by the recent enactment of the Aarhus Convention,[7] hailed by Kofi Annan as 'the most ambitious venture in environmental democracy undertaken under the auspices of the UN.'

Despite the agreement on the importance of public participation in environmental decision-making there is a clear lack of consensus on what public participation is supposed to mean and more importantly on what it is supposed to accomplish.[8] Indeed, as held by Fischer, 'the prospects of meaningful participation in an age dominated by complexity and expertise

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4. Regulation (EC) No. 1367/2006.
5. *See,* E. Burke, *in* K. Popper, *The Open Society and its Enemies: The Spell of Plato*, (1971, 1st ed.).
6 . Principle 10, Rio Declaration of Environment and Development (1992).
7. Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (1998).
8. Beierle, T. C., *Public Participation in Environmental Decision: An Evaluation Framework Using Social Goals*, *in Resources For The Future*, Discussion Paper at 2.

are neither obvious nor clear.'[9] The Convention itself does little to clarify these issues. In fact, the concept of public participation is left undefined. Similarly, the rationale for public involvement in decision-making is deliberately left open-ended: in the preamble it is suggested that access to information and public participation may 'enhance the quality and implementation of decisions', 'contribute to strengthening democracy' and therefore 'public support' for decisions, promote environmental protection and in Article 1 also the social importance of public participation is recognized by linking the procedural 'right' to participate in decision-making with the substantive human right to live in an adequate environment.

II.] IN WHAT WAYS PUBLIC PARTICIPATION ENHANCES ENVIRONMENTAL LAW?

The enactment of the Aarhus Convention may be understood as representing the ultimate recognition of the failures of the still predominant model of technical expert-led environmental regulation to adequately deal with all the facets of the present environmental crisis. Despite the fact that industrialization was generally accompanied in Europe by the development of liberal democracy based on the importance of individual interests, at the same time – Dewey argues – in order to deal with the increasingly complex and technical nature of the problems of the industrial society that the individual alone could no longer understand, this political trend was paralleled by the growth in power of large government bureaucracies 'directed by managerial and technical expertise' that pursued the "public interest" on the basis of "rational" and scientific tools.[10]

The imposition of this model of 'rational elitism'[11] was particularly strong and increasingly problematic in the environmental sphere. Unlike other political issues – Beck argues – because most environmental risks are nowadays only identifiable through scientific research, scientists and experts have gained a predominant political position in relation to risk regulation

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9. Fischer, F.,*Citizens, Experts and the Environment: The Politics of Local Knowledge*, (2000) at 5.
10. Fischer, F., *Citizens, Experts and the Environment: The Politics of Local Knowledge*, (2000) at 6.
11. Dryzek, S. J., *The Politics of the Earth: Environmental Discourses*, (2005) at 89.

and environmental management.[12] Nevertheless, thinking that the practice of environmental regulation may be carried out just through "rational" scientific judgment made by experts, who calculate the best and more efficient solutions to maximize public interest through the use of allegedly "neutral" tools such as "cost and benefit analysis" and "risk assessment", is inherently erroneous. Indeed - Eden maintains - while the complexity of modern environmental issues confers science a predominant role in environmental policy, at the same time science inevitably becomes 'politicized' when drawn into policy formulation by entering ethical, political and social spheres.[13] Therefore, as the allocation of 'risks' has increasingly a strong impact on the public and - besides scientific investigation - environmental policy involves questions of personal values in relation to costs, benefits or perception of risks as well as issues of distribution and social justice which may be highly divergent, it becomes clear that expert-led assessment of risks and costs and benefits is far from being 'objective' and that top-down centralized technocratic policy-making may often be inadequately sensitive to local circumstances.[14]

In addition to the realization of the impossibility for experts to generate solutions reflecting the wide range of interests in society, the recent failures of scientific assessments, e.g. in relation to the transmissibility of BSE to humans from cows or the long term effects of Chernobyl on the environment and the population, led to a generalized awareness of scientific uncertainty and to a consequent loss of confidence in the ability of technocratic institutions alone to adequately assess risks in complex ecological and social systems.[15] As Orts explains, 'the complexity of environmental problems is outstripping the capacity of even the best

12. Fischer, F., *Citizens, Experts and the Environment: The Politics of Local Knowledge*, (2000) at 52.
13. Eden, S., *Public Participation In Environmental Policy: Considering Scientific, Counter-Scientific And Non-Scientific Contributions, Public Understanding Of Science*, Vol. 5(1) (1996) at 189.
14. Dryzek, S. J., *The Politics of the Earth: Environmental Discourses*, (2005, 2nd ed.) at 96.
15. Getliffe, K., *Proceduralisation And The Aarhus Convention: Does Increased Participation In The Decision-Making Process Lead To More Effective EU Environmental Law?*, Environmental Law Review, Vol. 4(2) at 104.

scientists and scholars to solve environmental problems from on high, as if they were Platonic philosopher-kings or philosopher-bureaucrats.'[16]

By looking at the preamble and Art 1, in the Aarhus Convention it appears that the solution to the increasingly apparent inadequacies of the 'rational elitist' structure to deal with the environmental crisis lies in opening-up the traditional bureaucratic top-down system of environmental governance and enhancing the access of the public concerned and civil society to decision-making processes. However does a more participatory model unquestionably enhance environmental law and policy? Barton suggests that the different rationales for public participation may be bluntly divided into two general categories: the *process* rationale and the *substantive* rationale.[17] Ideas within the process rationale are based on the belief that public participation would enhance environmental policy *per se*, as the public, 'however wrongheaded and misguided' should be able to express an opinion on environmental issues.[18]

In fact, drawing from the above discussion, as environmental policies may deeply affect large sectors of the public and technical assessments involve value judgments and political considerations, closed regulatory systems can no longer be appropriate in a liberal democracy.[19] As argued by Stuart Mills almost two centuries ago, the foundation of democracy is not merely about the protection of individual rights in a negative sense but include the promotion of active participation in public life.[20] Therefore, only truly taking into consideration the perceptions and values of the public concerned would bring real democratic legitimacy to environmental decisions. Indeed, a genuine process of deliberation, allowing the exchange of different cultural, social and ethical values between the participants and the regulators through 'reasoning' and 'reflection' may

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16. Holder, J. and Lee, M., *Environmental Protection, Law and Policy*, (2007, 2nd ed.) at 41.
17. Barton, B., *Underlying Concepts and Theoretical Issues in Public Participation in Resource Development,* in, Human Rights in Natural Resource Development: Public Participation in the Sustainable Development of Mining and Energy Resources, (Zillman, D., Lucas, A. and Pring, G. eds., 2002) at 100.
18. *Per* Lord Hoffman in *Berkeley v Secretary of State for the Environment* [2000] 3 WLR 420 p. 430.
19. Royal Commission on Environmental Pollution 'Setting Environmental Standards' (1998).
20. Barton, B., *supra* note 17 at 87.

better inform the decision making process allowing the decision-makers to better define the public interest and the 'common good' in qualitative rather than merely quantitative terms when drafting policies, plans or legislation.[21] Where the whole range of stakeholders is actively involved throughout the decision-making process, moreover, the acceptability of decisions and the active participation of the public in their implementation may also considerably improve.[22]

Lastly, by linking in Art 1 the right of public participation to the right to live in a healthy and adequate environment the Aarhus Convention makes a potentially strong statement, reminding that environmental law is not simply about pollution control and environmental protection standards setting but is inherently correlated to issues of social and distributive justice. Although, as Beck argues, the externalities of industrial society are increasingly affecting the population at large, evidences show that "goods" and "bads" are unevenly shared within society and that a clear link can be found between environmental injustice and personal attributes such as ethnicity and socio-economic status.[23] Granting the right to participate and influence environmental decision-making therefore may potentially politically empower those groups which are generally underrepresented in the institutional power structures, and promote a fairer management of environmental resources and externalities.

Whether the emphasis on the involvement of stakeholders and the public at large improves the substantive quality and outcome of environmental decisions, as suggested in the preamble of the Convention, may be more controversial. On the one hand, in favour of this rationale, it is suggested that consultation of the public and interest groups may unquestionably increase the knowledge and expertise available to environmental agencies and regulators,[24] allowing more holistic and technically accurate decisions. As Fischer maintains, for the fact that many environmental problems originate in particular local contexts, affected citizens may have a fundamental role in the identification and definition of

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21. Steele, J., *Participation and Deliberation in Environmental Law: Exploring a Problem-solving Approach*, Oxford Journal of Legal Studies, Vol 21(3), (2001) at 423.
22. Barton, B. *supra* note 17 at 105.
23. Nadal, C., *Pursuing Substantive Environmental Justice: The Aarhus Convention As A "Pillar" Of Empowerment*, Environmental Law Review, Vol. 10(1), (2008) at 30.
24. Lee, *supra* note 6 at 122.

the problem as well as in finding alternative solutions adequate to their local environmental and social context.[25] Additionally the consultation of interested parties (NGOs, industries and other interest groups) may provide the decision-maker with essential technical knowledge and expertise in the relevant field that would not otherwise be available to the centralized regulatory agency because of the lack of sufficient staff and funds. More importantly, by climbing Arnstein's ladder of citizen's participation, the creation of forums where the public concerned is allowed to deliberate in relation to the definition and approval of environmental policies, may lay down the conditions for a process of interactive problem solving where the actors and the regulators are able to confront and critically scrutinize their different interests and perspectives and learn from each other's knowledge and experience.[26]

This process of social learning may not only increase the rationality of the decisions and the range of potential solutions, but is fundamental in bridging the implementation gap which is particularly endemic, for example, with regards to EC environmental legislation. Indeed, it is suggested, taking part to the elaboration of the policies creates public awareness and particularly a sense of ownership and responsibility on the part of the stakeholders in relation to the environmental problems and their solution, inducing more compliance on the part of the industries and active involvement and enforcement actions on the part of the public concerned.[27] Despite strong links may be found between the involvement of the public and the *quality of the decision*, on the other hand it is suggested that no such clear link may be found between deliberation and better *outcomes*.

In favor of this rationale Sagoff maintains that environmental decision-making based on a system of lay citizen's deliberation would both achieve the "common good" and greener outcomes. He argues that through reasoning and discussion personal interests would not be defensible any more and would be shaped into a collective and long term holistic thinking. Within this interactive and self-critical public discourse, the "citizen" side of the participants – so the argument goes – would prevail over their

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25. Fischer, F., *supra* note 10 at 217.
26. Smith, G., *Deliberative Democracy and the Environment*, (2003) at 62.
27. Woods, D., *Stakeholder Involvement and Public Participation: A Critique of Water Framework Directive Arrangements in the United Kingdom*, Water and Environment Journal, Vol. 22(1), (2008) at 260.

"consumer" side,[28] so that the process would necessarily tend to result in environmentally sustainable solutions. However, switching from this interesting philosophical theory to the real world and real prospects of participation, the only thing that could be said for certain is that the participatory process - as stressed in Art 2(5) of the Aarhus convention – by giving environmental interest groups the right to access consultations and decision-making forums formerly dominated by industries and business, may redress the balance towards more environmental protection by bringing into the discussion environmental interests and values.[29] On the other hand, it is suggested, the argument that public deliberation may result in better and more environmentally friendly outcomes is unclear and misplaced. Indeed the public at large may be heavily influenced by the media in relation to their perception of environmental issues and is generally ignorant with regards to the complex nature of environmental issues.

Moreover – as Lee and Abbot maintain – there are no evidences in practice showing that the public will prefer environmentally sustainable long term solutions over more short term economic benefits.[30] A striking example was the public outcry in 2006 in India against Greenpeace's legal action to stop dismantling the French aircraft carrier "*Clemenceau*" allegedly full of toxic asbestos, as the need of the public concerned (the shipyard workers) to feed themselves and their family was more important to them than the obvious long term adverse consequences of this project to their health and their environment. A last important problem in relation to this argument lies in the impossibility to judge even retrospectively whether the participatory process produced a better outcome.[31] As all participatory processes in the real world entail trade-offs between different interests, and because beside the personal interests of the parties what constitute the "common good" is a matter of subjective and political opinion, there will be inevitably divergent opinions on the "goodness" of the outcome. Thus, even by assuming that the best outcome for environmental law is the most

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28. Dryzek, *supra* note 11 at 112.
29. Smith, *supra* note 26 at 53.
30. Lee, M and Abbot, C., *The Usual Suspects? Public Participation Under the Aarhus Convention,* The Modern Law Review, Vol. 66(1), (2003) at 86.
31. Steele, J., *Participation and Deliberation in Environmental Law: Exploring a Problem-solving Approach,* Oxford Journal of Legal Studies, Vol. 21(3), (2001) at 439.

environmentally protective one, it would still be difficult to make an assessment because of the scientific and non-scientific divergence of opinions on what constitute environmental protection.[32]

As a logical consequence of the above discussion, it is clear that in order to evaluate whether in practice the implementation of the Aarhus Convention has effectively brought positive developments to EU environmental law and policy a mere focus on the *outcome* of the process i.e. whether the participatory process has brought about *better* environmental decisions or policies, would be limited and misleading. As the root of the problem that public participation would potentially address at EU level is, *inter alia*, the crisis of legitimacy and effectiveness of the present regulatory system because of the lack of real democratic accountability of technocratic institutions, the distance of central bureaucracies from local issues and the consequent problems of implementation of environmental regulations, although the commitment to participatory processes may also enhance the outcomes, the benefits and effectiveness of the commitment to participation in environmental law entirely depend on the quality of the *process* itself. Therefore the focus must be on whether institutions have genuinely opened up their decision to public scrutiny, whether there is a true commitment to take into account public opinions or whether face-to-face forums of social learning between stakeholders have been put in place.[33] If the commitment to public participation is on the contrary a mere façade or 'tokenism',[34] or it 'simply holds a mirror up to the pattern of power of the community' by directly or indirectly excluding the less powerful groups,[35] then it is doubtful whether participation may be a positive development for environmental law as the process would paradoxically become anti-democratic and its potential benefits may be exceeded by the burdens that participatory processes involve in terms of time and money.[36]

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32. Lee, M., *supra* note 25 at 123.
33. Beierle, T. C., *supra* note 4 at 12.
34. Arnstein, S. R.,, *A Ladder of Citizen Participation,* Journal of the American Planning Association, Vol.35(4), (1969) at 217.
35. Barton, *supra* note 17 at 109.
36. Verschuuren, J., *Public Participation Regarding the Elaboration and Approval of Projects in the EU after the Aarhus Convention*, *in* The Yearbook of European Environmental Law, Vol. 4. (2005) at 32.

III.] PUBLIC PARTICIPATION IN THE AARHUS CONVENTION

It is therefore clear that the mixed motives for public participation in the Aarhus Convention separately or concurrently could all bring in practice positive developments in environmental law. However, by not going into the details as to the procedures required to meaningfully consult the public, a wide discretion as to the nature of the procedure is left to the signatories. In fact, the only Article really dealing with the nature of the process itself, very vaguely holds that 'procedures for public participation shall allow the public to submit, in writing or, *as appropriate*, at a public hearing or inquiry with the applicant, any comments, information, analyses or opinions […]'.[37] Nevertheless the Convention lays down a number of provisions and obligations on the signatories that create fundamental conditions for a meaningful participatory process in environmental law. Firstly the 'public' and 'public concerned' are given a very broad definition in Art 2(4) and Art 2(5) respectively. A central innovation to national and particularly EC environmental law is the inclusion in the definition of NGOs 'promoting environmental protection', which 'are deemed to have an interest'[38] not only in environmental decision-making but also in relation to the available review procedures challenging the substantive and procedural legality of the decision.[39]

Despite this focus on the role of NGOs as agents of public participation may raise – as shall be discussed below – further problems of legitimacy, representation and accountability particularly at EC decision-making level,[40] the active inclusion of these interest groups is essential to achieve many of the instrumental aims of the Convention, such as improving cooperation in the implementation and the monitoring of compliance of regulators and regulated entities with environmental standards,[41] promote environmental protection, as well as increasing the

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37. Art 6(7).
38. Art 2(5).
39. Art 9(2).
40. Morrow, K., *Public Participation in the Assessment of the Effects of Certain Plans and Programmes on the Environment – Directive 2001/42/EC, the UN/ECE Espoo Convention and the Kiev Protocol*, *in* The Yearbook of European Environmental Law, Vol. 4. (2004) at 55.
41. The possible law enforcement role of the public and interest groups is further recognized in Art 9(3) 'each Party shall ensure that, where they meet the criteria, if

quality of decisions. Secondly, the right of the public to participate provided in Art 1 is defined in detail in Art 6 – in relation to decisions on proposed specific activities subject to EIA or IPPC,[42] or any other activities likely to have a significant effect on the environment – and more loosely provided for in Art 7 – in relation to plans, programmes and policies relating to the environment – and Art 8 – with regards to the preparation of executive regulations or other legally binding instruments.

Importantly, in Art 6(2) the obligation to provide participation applies as soon as the draft of the proposed activity is published and is coupled with the duty to actively inform the public about the nature of the proposed activity and the timing, nature and location of the participation procedure. Moreover Art 6(3) requires that the public at large should be given sufficient time to acquire information and be consulted when all options are still open in order to have the opportunity to effectively influence the decision,[43] and Art 6(8) and 6(9) potentially strengthen this opportunity by requiring the decision-making authority to take 'due account' of the outcome of the participatory process and provide the reasons on which the decision is based, so that the public views would not be allowed to be simply undermined in favour of purely scientific and technical submissions.[44] In relation to the more politically sensitive decision-making levels dealt with in Art 7 and 8, which are generally matter for representative bodies,[45] the requirement to set up participatory processes is much less demanding and wholly unenforceable in relation to the latter. Lastly, it is important to mention that these provisions are supported by other two crucial "interlocking pillars" that extend the access principle to environmental information,[46] and review procedures.[47] Although they are not directly related to the right to participation, these two pillars ensure openness and accountability of public bodies in relation to environmental decision-making, laying down the foundations for effectively carrying out

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any, lay down in its national law, members of the pubic have access to administrative and judicial procedures to challenge acts and omissions by private persons and public authorities which contravene provisions of its national law relating to the environment'.

42. Art 6(1)(a) and Annex I.
43. Art 6(4).
44. Morrow, K., *supra* note 40 at 63
45. Lee, *supra* note 6 at 159.
46. Art 4 & 5.
47. Art 9.

public participation. As the right for the public at large to acquire clear and up-to-date information about the envisaged plans and projects is 'the necessary starting point for any public involvement in decisions,'[48] the right to access a court of law to review the procedural and substantive legality of the decision-making process under Art 6 is undoubtedly fundamental for enforcing the other two pillars.

IV.] IS ENVIRONMENTAL LAW AND POLICY ENHANCED AT EU LEVEL?

The need to resolve the well known problems of democratic legitimacy and lack of satisfactory implementation of environmental legislation[49] has driven the EU to endorse the rhetoric of public participation with great enthusiasm. The incorporation of participatory procedures in EC environmental legislation directed at Member States is an important confirmation and, it is suggested, a fundamental development in relation to the recent general switch in EU environmental law "from government to governance" and more specifically from central standard setting "command and control" directives to more decentralized procedural environmental legislation leaving significant flexibility to Member States, local authorities and regulators in setting the specific implementation means of EU wide objectives in relation to the local circumstances.[50] As the reasons behind this move towards proceduralization of legislation are, *inter alia*, to bring decisions closer to the people in order to enhance the democratic legitimacy of EC environmental law, to improve implementation of substantive legislation,[51] and to make EC environmental law more adequate and responsive to the complexity of local social and ecological systems,[52] it is self-evident from the above discussion that these objectives can only be achieved through the enforcement of genuine process of public participation at local level where individual members of the public would be able to get involved.

Particularly relatable to the *process* rationale, a first example of this EC's legislative development in practice is the amendment of the

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48. Lee, *supra* note 30 at 88.
49. Getliffe, *supra* note 15 at 101.
50. Lee, *supra* note 6 at 163.
51. Lee, *supra* note 6 at 164.
52. Getliffe, *supra* note 15 at 105.

Environmental Impact Assessment Directive on Plans and Programmes through the Public Participation Directive implementing Art 6 of the Aarhus Convention.[53] In broad terms the EIA Directive lays down purely procedural obligations without setting any environmental standard, simply requiring local authorities to acquire information from different sources (including the developer, the public and experts) on the likely environmental effects of certain plans or programmes before granting the planning permission.[54] As in the predictions that need to be made in relation to likely environmental effects of the proposed developments value judgment is unavoidable due to 'politicized evaluations, narrow boundary settings, data gaps and simplified assumptions,'[55] as well as issues of distribution and location of "goods" and "bads", the involvement of the public and interest groups in the evaluation is fundamental in terms of provision of different values and ultimately contributing to the democratic accountability of the often unelected regulatory bodies.

As Chalmers optimistically argued before the 2003 amendment, in adopting the EIA Directive the EC has created a space 'between the state and its citizens in national territories' with the potential of delivering new forms of local democracy.[56] On the one hand, it can be argued that the 2003 amendment has shifted the focus somewhat,[57] from a previously technocentric approach to the evaluation of plans and projects and a merely instrumental approach to public participation to a more transparent and genuine participatory assessment procedure. Almost literally transposed from the Aarhus Convention, for example, Art 6(2) EIA provides for the public at large to be informed early in the environmental decision-making procedure or as soon as the information can reasonably be provided, about the nature, time and place and details of the proposal and the decision-making process, and going beyond the requirements of the Convention Art 6(3)(c) importantly requires the Member State to inform the public of any other information that has become available after the time the public

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53. EIA Directive 85/337/EEC amended by the Public Participation Directive 2003/35/EC.
54. Provided in Annex I and in Annex II if the authority determines that it is likely to have significant effects on the environment.
55. Wilkins, H., *The Need of Subjectivity in Environmental Law*, EIA Review, Vol. 23(1), (2003) at 401.
56. Holder, *supra* note 16 at 558.
57. Lee, *supra* note 6 at 173.

concerned was involved; similarly drawing from the Convention, the amendment in Art 9(1)(a) importantly requires the authority to examine 'the concerns and opinions expressed by the public concerned' when providing the reasons and considerations on which the decision is based, by (possibly) showing what influence the participatory process has brought about on the final decision.[58]

On the other hand, it is suggested that in relation to the fundamental provisions relating to the actual participation of the public in decision-making, the approach taken by this piece of legislation is limited and unsatisfactory. Firstly, as Verschuuren has noted, whether Art 6(7) of the Convention allows the public at large to submit opinions or participate in public hearings, in Art 6(4) of the EIA Directive only stakeholders and NGOs 'promoting environmental protection' are given this right.[59]

Although a justification for this limitation may be the risk of opening a floodgate of litigation and that, if the whole public was given an interest, processes involving direct face-to-face participation would become impossible, this restriction is problematic as could potentially exclude important actors such as environmental justice advocates,[60] which could bring into the equation the interests of the powerless and underrepresented social classes which are in practice often indirectly excluded from the process because of lack of funds, time or sufficient education.

Secondly, and most importantly, as in the Aarhus Convention also in its implementation through the 2003 Directive there is a complete lack of engagement with the nature of the participatory process which is again almost entirely left to Member States' discretion.[61] On the one hand the formal imposition from EC legislation of fixed participatory requirements such as public inquiries or stakeholders meetings, or of a formal obligation to actively identify the public concerned could clearly be problematic and counter-productive. In fact, this would firstly run counter the constructive philosophy of "learning by doing" behind proceduralization as different cultures and different local contexts may require different forms of

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58. Verschuuren, J., *supra* note 36 at 38.
59. Verschuuren, J., *supra* note 36 at 36.
60. *See,* Nadal, *supra* note 23. As Nadal argues, environmental justice advocates may neither fall under the category of the public concerned nor (strictly speaking) under the category of NGOs promoting environmental protection.
61. The minimum requirement in the 2003 Directive is that the public should be entitled to express comments and opinions.

participation.[62] Secondly, by requiring every assessment of plans and programmes to go beyond mere consultation may be excessively burdensome and challenging for the institutional structures of Member State regulators.

On the other hand, if nothing more than the Aarhus minimum requirements is provided in relation to the potential direct or indirect exclusion of certain classes of participants and no incentive is granted for participatory processes to go beyond a mere top-down information gathering exercise or the widespread "decide-announce-defence" approach to environmental decision-making,[63] the risk is that the participatory process will remain a 'mere window dressing ritual' instead of opening the doors for new bottom-up democratic forms of governance in environmental law and policy.[64] Thus, despite the transparency of the process may be enhanced, the democratic accountability and the trust on the local regulators may hardly be, as with the absence of an interactive and discursive process the public will not feel any ownership or commitment in relation to the final decision and the general perception will be that it is simply 'no use' to participate.[65]

Particularly relatable to the *substantive* rationale, a further example showing the importance of public participation to the development of EU environmental law and policy is the Water Framework Directive,[66] an 'overarching piece of legislation that aims to harmonize existent European water policies and to improve water quality in all of Europe's aquatic environments.'[67] Whether the management of waters was previously fragmented between bathing water, drinking water, surface water and groundwater, and regulated by numerous traditional "command and control" specific Directives, the scope of the Water Framework Directive is

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62. Harmoni, *Learning Together to Manage Together: Improving Participation in Water Management*, COP Handbook (2003), available at http://www.harmonicop.info/handbook.php (last visited April 8, 2009).
63. The minimum requirement provided in Art 6(4) of the Directive is to give the public the opportunity to '*express comments or opinions*'.
64. Arnstein, *supra* note 34 at 219.
65. Verschuuren J., *supra* note 36 at 44.
66. 2000/60/EC.
67. Kaika, M. and Page, B., *The EU Water Framework Directive: Part 1. European Policy-Making and the Changing Topography of Lobbying*, European Environment, Vol. 13(1), (2003) at 314.

to set up a strategic framework for an integrated management of the whole water system, recognizing the 'unity of the hydrological cycle.'[68] Differently from the EIA Directive, the WFD establishes common environmental quality standards and emission limit values to be achieved and implemented. However, for the fact that local and regional conditions greatly differ in terms of water-related problems, water uses and ecological and socio-cultural systems, the EC in this Directive purposefully refrained to centrally set strict rules with regards to the implementation of these standards. As the HarmoniCop project acknowledges, 'command and control strategies are inadequate to address change in a complex system in which multiple stakeholders interact with dynamic ecological systems.'[69]

Therefore, consistently with the shift from "government to governance", the WFD leaves great discretion to local actors with regards to the best ways to reach the centrally established quality standards for every hydrological unit (River Basin Districts).[70] The requirement to involve the public and stakeholders within this complex multi-level regulatory system is crucial and, as emphasised in the preamble, is the precondition for the success of the Directive.[71] Compared to the EIA Directive, the provision on public participation in the WFD applies at the earlier stage of production (as well as review and update) of the water management plan of each river basin district.[72] Indeed, allowing public participation at this stage – the "Water Information System for Europe" report suggests – may fundamentally improve the quality of the decisions and guarantee the achievement of the Directive's environmental objectives by ensuring more effective implementation.[73] With regards to the quality of the decisions, the

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68. Gouldson, A., et. al, *New Alternative and Complementary Environmental Policy Instruments and the Implementation of the Water Framework Directive*, European Environment, Vol 18(1), (2008) at 362.
69. Tippett, J., et. al, *Social Learning in Public Participation in River Basin Management – Early Findings from HarmoniCOP European Case Studies*, Environmental Science and Policy, Vol. 8(1), (2005) at 288.
70. Newig, J. Pahl-Wostl, C. and Sigel, K.,, *The Role of Public Participation in Managing Uncertainty in the Implementation of the Water Framework Directive*, European Environment. Vol. 15(1), (2005) at 335.
71. Preamble (14).
72. Water Framework Directive Art 14(1).
73. 'The main purpose of participation is to improve decision-making by ensuring that decisions are soundly based on shared knowledge, experiences and scientific evidence, that decisions are influenced by the views and experience of those affected by them,

early participation of the public is essential in the context of water management as it may allow the regulators to deal more adequately with the numerous questions of uncertainty.[74] In fact, decisions in relation to the best measures to adopt in order to reach the "environmental quality standards" or assessments of scientific as well as socio-economic nature as to what bodies of water may be excluded from the 'stringent environmental standards' because the human activity is such that 'the achievement of these objectives would be infeasible or disproportionately expensive',[75] may carry high degrees of uncertainty because of the great variety of factors to balance and the lack of sufficient knowledge e.g. about the causal relationships regarding the origins and effects of pollution.[76]

The involvement of the public concerned (e.g. farmers, businesses or water companies) and other interested actors at this early stage may increase the information available to the decision-maker through the provision of located knowledge about the sources of pollution and their interactions and provide a better insight on the working of the system in which the proposed measures should be implemented and the related costs of implementation, thus laying the grounds for the formulation of more informed, efficient, acceptable and sustainable decisions. Moreover, going beyond the minimum requirement to inform and consult the public laid down in the EIA Directive, Art 14 of the WFD potentially promotes a much higher standard of participation by requiring Member States to encourage the *active involvement* of all interested parties.

Although looking at the black letter of the law this requirement is not strictly mandatory on Member States and local regulators, who should be free to choose the type of participatory process they think fit, the EU through working documents, guidelines and reports from Member States on the various negative experiences and best practices of public participation in the elaboration of river basin management plans,[77] is

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that innovative and creative options are considered, and that new arrangements are acceptable to the public. The fundamental rationale for undertaking public participation in the WFD process is to ensure the effective implementation and achievement of the environmental objectives of water management'. 'Plunge into the Debate': 2nd European Water Conference Working Document at 4.

74. Newig, *supra* note 70 at 334.
75. Art 4(5).
76. Newig, *supra* note 70 at 336.
77. S*ee*, HarmoniCop Project, *supra* note 62; '*Guidance on Public Participation in Relation to the Water Framework Directive*' (2003).

proactively encouraging Member States and local authorities to 'comply with the spirit of the WFD' by striving for participatory mechanisms allowing a more interactive dialogue with stakeholders.[78] Indeed, a process allowing a face-to-face constructive dialogue between the public, stakeholders and regulators is regarded by the EU as crucial to the effective implementation of the WFD as would allow the creation of a dynamic process of mutual learning between the stakeholders and the decision-maker in relation to their 'water awareness,'[79] thereby laying the grounds for the possibility of consensus building between the actors with regards to the final decision and therefore an increased collaboration in the implementation of the water management plan.

Finally, the importance of ensuring public participation in environmental law and policy at EU level was not only recognized through the imposition of participatory provisions in legislation applying to Member States, but after the signature of the Aarhus Convention it has been gradually introduced in the EC institutional decision-making arrangements, where stakeholders and other non-state actors are increasingly encouraged to express their opinions or participate in the elaboration and approval of environmental policies. Because of the complexity and technical content of policy debates at EU level which tend to indirectly exclude the participation of lay citizens, in order to receive meaningful contributions to the quality of environmental decision-making,[80] and improving the accountability of decisions by 'bridging the gap between the citizens and the bureaucratic elite operating in the context of the EU and increasing the responsiveness of political institutions to values of citizens,'[81] the focus of the Commission has been mainly on the participation of organized interest groups in environmental decision-making.

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78. Rault, A. K. and Jeffrey, P. J., *Deconstructing Public Participation In The Water Framework Directive: Implementation And Compliance With The Letter Or With The Spirit Of The Law?*, Water and Environment Journal, Vol. 22(1), (2008) at 248.
79. *Ibid,* 244.
80. COM (2002) 704 'Towards A Reinforced Culture Of Consultation And Dialogue - General Principles And Minimum Standards For Consultation Of Interested Parties By The Commission' at 5.
81. Curtin, D., *Private Interest Representation or Civil Society Deliberation? A Contemporary Dilemma for European Union Governance*, Social and Legal Studies, Vol 12(1), (2003) at 55.

The optimistic hope of the Commission, as Lee argues, is that involvement of civil society organizations may additionally improve the implementation of decisions by 'getting citizens more actively involved in achieving the Union's objectives' and by performing an 'awareness-raising role.'[82] In relation to the "substance rationale", the Commission's practice of informal consultation of environmental interest groups and stakeholders in environmental decision-making is not a new phenomenon.[83] In the preparation of the WFD in 1998, for example, various environmental NGOs were already given wide access to the working documents and early opportunities to actively participate in the debate by bringing their scientific expertise and political ideas into the discussion.[84]

This system of informal consultations, although may have been in itself instrumental for reaching 'greener' policies and better implementation, raised nevertheless serious questions of accountability and arbitrariness with regards to the 'risk of policy-makers just listening to one side of the argument or of particular groups getting privileged access' because of their better financial resources or their more "institutional" positions.[85]As a result, before the formal implementation of the Aarhus Convention to the EU institutions through Regulation 1367/2006, in order to enhance the transparency and "democracy" of the policy-making processes, following an initial White Paper,[86] the Commission adopted in 2002 internal "minimum standards of consultation" with the view of establishing a more open, accountable, inclusive and coherent system of public participation in relation to 'major policy initiatives'.[87]

These standards importantly require, *inter alia*, early and effective consultation, the creation of a web portal providing up-to-date publication of policy proposals and the opportunity for the public to produce written opinions,[88] the obligation to take into account the outcome of the consultation and crucially require the Commission to ensure 'adequate coverage' of the participants by including those affected by the policy, those

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82. Lee, *supra* note 6 at 137.
83. *Ibid*, 3.
84. Kaika, *supra* note 67 at 326.
85. COM (2001) 428, *European Governance – A White Paper,* at 17.
86. *Ibid.*
87. *Supra* note 80.
88. See in relation to environmental policies http://ec.europa.eu/environment/consultations_en.htm.

involved in the implementation and interest groups by ensuring a "proper balance" between large and small organizations, social and economic bodies and between EU and international organization.[89] Regulation 1367/2006, besides extending these minimum standards to all internal impact assessment of policies relating to the environment,[90] and granting to certain environmental NGOs the right to apply for an internal review and perhaps judicial review in case of a violation of their Aarhus participation rights,[91] reinforce the active role of the Commission in identifying the public that may participate.[92]

It is suggested that such formalization of the Commission's practices of public participation, although may raise concerns about the extent of institutional control over the participants and the risk of only "mainstream" interest groups being involved,[93] or about NGOs representing "unconventional" environmental interests becoming "mainstreamed" and enter the bureaucratic establishment in order to be recognized by the Commission, may nevertheless be an important step for redressing the balance in favour of a more legitimate and transparent environmental policy-making process. The formalization of consultation practices in the environmental field, through the creation of direct and more accessible 'opportunity structures' is in line 'with the idea of a more deliberative way of arriving at decisions after all possible viewpoints have been weighed,'[94] and may contribute to the renovation of public trust in the environmental bureaucracy and acceptance of the decisions. However we should not be illuded that the implementation of the Aarhus Convention in EU institutions, through the formalization of the right of access of interest groups has brought about a new era of participatory "environmental democracy."

Certainly civil society organizations in this light may be an important vector (or even the only viable one) for bringing people's voice and values as well as for introducing ecological interests in the policy-making at EU level. Nevertheless, it is not always clear whose interests will

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89. COM, *supra* note 80 at 19-20.
90. Regulation 1367/2006, Art 9(1) and Commission Decision 2008/401/EC.
91. *Ibid.* Art 11 & 12.
92. *Ibid.* Art 9(2).
93. Lee, *supra* note 6 at 136.
94. Curtin, *supra* note 81 at 69.

be represented and whose values will be brought forward. As Morrow maintains, 'once NGOs reach a certain critical mass, they cease to be organs of participative democracy' and tend to become representatives in their own function.[95] As the large and more organized interest groups are more likely to get actively involved at this level because of greater lobbying capabilities and physical presence in Brussels, it is clear that the potential of public participation to bring more democracy in environmental policy-making at this level should not be over emphasised.

V.] CONCLUSION

In the first part of this paper, I have demonstrated that although the assessment of whether public participation will substantively deliver better outcomes is far from straightforward, this development may clearly bring fundamental procedural developments in environmental law. By bringing, *inter alia*, new values, knowledge, and possibly the interests of marginalized groups that are generally the most affected by environmental "bads" into the environmental decision-making process,[96] this practice may produce more informed responses to the complexity of environmental issues, more democracy and social justice as well as more trust in the institutions and consequently better implementation of environmental law. A first general problem that has been identified in relation to the Aarhus Convention and its implementation by the EU in national law (e.g. through the 2003 Participation Directive) is however the 'lack of engagement' with the quality of the participatory process.[97] On the one hand, the failure to provide clear guidelines and formalized processes of public participation is justified by the fact that different types of participatory processes may be required depending on the subject matter, the level and location of the decision-making.

On the other hand, the lack of defined mechanisms or the failure to encourage higher standards of participation ensuring that public values are truly taken into account and particularly that less resourceful and marginalized groups are adequately included, leaves the risk that the

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95. Morrow, *supra* note 4 at 55.
96. Nadal, *supra* note 23 at 30.
97. Lee, *supra* note 30 at 107.

participatory process become a mere 'tokenism.'[98] On a positive note, the examination of the implementation of the Aarhus Convention at EU level has demonstrated that the endorsed rhetoric of public participation has brought about considerable potential positive developments in relation to EC environmental law and important formal changes in the bureaucratic decision-making arrangements of the Commission. What can be concluded from the analysis of the EIA Directive as amended, the Water Framework Directive and the formalization of the Commission consultation practices at EU level through Regulation 1367/2006 is however that in practice there is at present a striking imbalance in the EU approach to public participation between the commitment to the substance rationale and to the process rationale.

The importance of establishing meaningful mechanisms to involve the public in decision-making as an instrumental tool to achieve better and more efficient decisions and better implementation of environmental law has been widely recognized in the implementation of the WFD and through the focus on the inclusion of environmental NGOs in EU decision-making level. On the contrary, although the increased transparency and inclusiveness of environmental decision-making at EU level and the move towards procedural legislation have potentially established the grounds for including the values and socio-economic interests of the public as well as empowering the more vulnerable sections of society, because of the less apparent benefits there is still no consistent institutional self-criticism and political will to challenge the present bureaucratic environmental decision-making structures both at EU and Member State level in order to move towards a more democratic, open and genuinely inclusive system of environmental policy-making.

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98. Arnstein, *supra* note 34.

DESIRED INSTITUTIONAL AND LEGAL ENVIRONMENT FOR IMPLEMENTING PES MECHANISMS IN INDIA

Madhu Verma[*] and Dhaval Negandhi[*]

ABSTRACT

Payments for Ecosystem Services (PES) is still in its formative years in India. While the creation of markets for ecosystem services has been theoretically recognized and experimented on pilot basis, the concept is still not envisaged in the institutional and legal framework in the region. Although the National Environmental Policy (2006) has recognized PES and attempts have also been made to establish PES in India; the legal and institutional frameworks to affect PES are still lacking. In this context, it is necessary to understand the requirements to create enabling institutional and legal settings under which PES can develop further. There are several issues which need to be sorted out to lay the groundwork for implementing PES in the region such as property rights, specific legal requirement for PES, and modifications in Contract Law to name a few. The paper is an attempt to assess India's legal and institutional environment based on factors such as enabling laws and policies, property rights issues, cross-sectoral linkages and institutional system to draw lessons for providing inputs for more effective PES mechanisms in India. This has been achieved by first examining the current status of PES in India, followed by a look at the desired legal structure, the institutional setup and the role of community institutions in its implementation.

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I.] PAYMENT FOR ECOSYSTEM SERVICES (PES)

Despite recognizing the importance of ecosystem services[1] in determining human well-being, ecosystem services (ES) have largely been ignored not only in market; but also in law and policy.[2] On one hand where markets have not been able to send correct signals to encourage sustainable use of natural resources[3]; laws and policies in the past on the other have often not been designed to protect the ecosystems which generate valuable goods and services. In fact, many encourage degradation of these valuable ecosystems. In this context, when markets, law and policy have failed in reflecting the true worth of 'life-supporting' ecosystem goods and services, the concept of PES has emerged as a promising approach.[4]

Although the literature identifies five general criteria to a successful PES[5] which includes (i) voluntary transactions; (ii) well-defined ES; (iii) buyer for ES; (iv) seller for ES; and (v) payment is conditional upon receiving ES; the legal and institutional context of PES is also unanimously recognized by authors as key to the success of PES.[6] The legal and institutional framework plays a fundamental role in supporting all aspects of

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1. Broadly speaking, "ecosystem or environmental services" refers to the benefits people obtain from natural ecosystems, in contrast with man-made structures. These services can be classified as provisioning services such as food, water, timber and fiber; regulating services that affect climate, floods, disease, wastes and water quality; cultural services that provide recreational, aesthetic and spiritual benefits; and supporting services such as soil formation, photosynthesis and nutrient cycling (MA 2005).
2. Landell-Mills, Natasha, and Ina T. Porras, *Silver Bullet Or Fools' Gold: A Global Review Of Markets For Forest Environmental Services And Their Impact On The Poor*, (2002), London: International Institute for Environment and Development (IIED).
3. *See*, Panayotou and Theodore, *Developments Of Change: Motivating And Financing Sustainable Development* (1998).
4. *See*, Wunder. S, *Payments For Environmental Services: Some Nuts And Bolts*, (2005), CIFOR.
5. Landell-Mills, *supra* note 2; Wunder, *ibid*; See, Pagiola. S, *Payments For Environmental Services In Costa Rica*, Ecological Economics 65 (2008): 712-724.
6. *See,* George, A., et. al, *Potential And Limitations Of Payments For Environmental Services (Pes) As A Means To Manage Watershed Services In Mainland Southeast Asia*, International Journal of the Commons 3, no. 1 (2009).

PES mechanisms, particularly in countries with weak governance structures.[7]

This paper is an attempt to assess India's legal and institutional environment to implement PES mechanisms based on important parameters such as enabling laws and policies, property rights issues, cross-sectoral linkages and institutional system.

II.] CURRENT STATUS OF PES MECHANISMS IN INDIA

India has made significant progress in addressing deforestation and increasing forest cover through several policy and institutional mechanisms. However, it is still struggling to fight with degradation of ecosystems. Dealing with degradation and increasing forest cover is closely linked with enabling legal and institutional conditions which foster conservation and incentivize local community to invest in natural infrastructure.

Market-based instrument (MBI) as applied to ecosystem services, more generally termed as Payments for Ecosystem Services (PES) is a relatively new concept in Indian policy context. Although being still in its formative years, the interest in PES as a tool for natural resource management is growing, despite major setbacks.

Under-valuation of forest resources in India is causing immense losses to the sector and to the economic system. The present national accounting system in India under-records tangible benefits and ignores the contribution of intangible ecological services by forests. Although the role of ecosystem services in supporting livelihood and buffering against poverty is less exhibited than provisioning services, they play an important role in reducing vulnerability of the poor. Markets for ecosystem services can only be developed once the economic value of these services is estimated. Thus

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7. FAO and REDLACH, *Electronic Forum On Payment Schemes For Environmental Services In Watersheds*, (2004), Santiago, Chile: FAO; Mayrand, K. and M. Paquin, *Payments For Environmental Services: A Survey And Assessment Of Current Schemes*, (2004), Montreal: Unisfera, available at http://www.cec.org/files/PDF/ECONOMY/PES-Unisfera_en.pdf (last visited on September 8, 2009); Wunder, *supra* note 4; Pagiola, *supra* note 4; Huang, M. and S. Upadhyaya, W*atershed-Based Payment For Environmental Services In Asia*, (2007), Winrock International Working Paper No. 06-07, OIRED.

valuation is a pre-requiste for creating markets for ecosystem services.[8] Valuation and accounting framework are needed for factoring in the intangibles from forests so to reflect the true contribution of the forestry sector to the Indian economy.[9] Such frameworks are also essential for encouraging investment in the sustainable management of natural resources through various PES mechanisms.

A number of factors influence the development of PES programs in India. Firstly, the governance structures for natural resource management in India vary from command-and-control to more decentralized, participatory approaches. Such governance structures shape the capacities of local and national-level institutions to support PES.[10] Secondly, due to high population density and low land holding per household, the transaction costs[11] are relatively higher compared to other regions. And thirdly, much of the forest and agricultural land is state-controlled; with communities or individuals possessing weak property rights.[12] Owing to these reasons, India has been much slower in implementing PES as compared to Central American countries at a similar level of economic development, with many proposed schemes, but few mature projects.[13] Even within Asia, India has lagged behind countries like Philippines, Indonesia and Vietnam in regards to the number of PES mechanisms.[14]

III.] DESIRED LEGAL ENVIRONMENT FOR IMPLEMENTING PES

In addition to the reasons cited, unsupportive policy frameworks - both legal and institutional - are a principal barrier to expansion of effective and efficient PES mechanisms in India. Currently, there is a lack of PES-

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8 . Verma, Madhu et. Al, *Does Internalizing The Regulating Services Alter The Poverty-Ecosystem Dynamics: Evidences From South Asia*" forthcoming [on file with author].

9. Verma, Madhu, *Framework For Forest Resource Accounting: Factoring In The Intangibles,* International Forestry Review , no. 2, (June 2008): 362-375.

10. Huang, M., *supra* note 7.

11. Panayotou, *Green Markets: The Economics of Sustainable Development*, (1993) International Center for Economic Growth and the Harvard Institute for International Development.

12. Ostrom, *infra* note 17, Property rights should be: well-defined, transferable, enforceable, and secure over the long term..

13. Landell-Mills, *supra note 2.*

14. Huang, M., *supraa* note 7.

specific supportive legal and institutional system in place. The fact that so few PES mechanisms have been implemented in India calls for a closer examination on the existing regime; and analyze how policies can be modified to support sustainable PES schemes.

AMENDING EXISTING LAWS FOR INTRODUCING PES

Private PES mechanisms do not require specific legal framework beyond basic contract law. However, scaling their positive results up through a nested approach may require a specific policy and legal framework. An effective legislative framework which regulates public PES mechanisms has the potential to stimulate the development of trustworthy markets and to ensure good governance. Introducing specific PES provisions through amendments to existing legislation requires less legal drafting and synchronization work. It would also provide an opportunity to clarify or further develop existing economic instruments.
Source: (Greiber 2009)

Owing to incomplete property rights, individuals do not bear the full costs, or receive the full benefits, of their actions (often termed negative/positive externalities). Property rights govern resource access, use and transformation.[15] Murtough, Aretina and Matysek (2002) note seven property right attributes of importance in enabling markets for ecosystem services and are shown in Table 1.

Inter-sectoral policies often create confusion over the appropriate role that a government is expected to play in the development and operation of specific types of PES mechanisms. There is an urgent need to coordinate and streamline policies and regulations in different sectors and government jurisdictions. For example, water and fertilizer policies (related to subsidy) often have self-cancelling effects and end-up in degrading ecosystems. There have also been conflicts between the deliveries of ecosystem services as "private goods" versus "public goods;" as no legal definition of any of the ecosystem services to be purchased is available.[16]

15. *See,* Ostrom, E. and E. Schlager, *The Formation of Property Rights*, (1996); Pagiola, *supra* note 4..
16. Huang, M., *suprs* note 7.

The absence of legal and institutional support is felt while expanding a particular PES mechanism at a larger scale. Issues relating to property rights (such as who owns the land, who owns the natural resources and who owns the ecosystem services of the land) are essential to address when a successful PES model is to be replicated at a broader level. Potential PES buyers may hesitate as the legal standing for purchases and enforceability of contracts is not clear under the current legal regime.

A large number of laws, policies and programmes affect natural resource management in India. However, the paper discusses only important ones which are considered to be significant from PES perspective (Table 2).

The laws in many cases are either silent or ambiguous about the extent and nature of legal procedures and requirements necessary to enter into private/government and private/local community contracts, especially where the contract involves the management and use of land and its natural resources. Private contracts pertaining to natural resource management on public lands are considered a particularly risky area of the Indian Contract Act.

Another potential obstacle to carbon PES is that the fact that A/R CDM[17] Project Methodologies have still not developed significantly. The network of support organizations related to forestry can play an important role in developing methodologies for the same. Methodologies related to REDD[18] and REDD plus[19] mechanisms are also in their nascent stage of development and need serious efforts on the part of support organizations so to achieve dual objectives of poverty alleviation and ecological sustainability.

Due to the lack of legally enabling conditions, the risks associated with PES also increase as the private buyers are unsure about the political and public acceptability of their role in PES. Adding to that, unclear tenure

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17. Afforestation and Reforestation Project activities under Clean Development Mechanism (CDM) of Kyoto Protocol.
18. REDD (Reducing Emissions from Deforestation and Forest Degradation) provides strategies and incentives for reducing emissions from deforestation and degradation as a key mechanism for international governments and partners to address global warming.
19. Refers to reducing emissions from deforestation and degradation, conservation of existing carbon stocks and enhancement of carbon stocks.

rights for land and other natural resources defeat any attempt of ensuring long-term ecosystem service contracts.

As financial payments from PES mechanisms are often considered insignificant, non-financial benefits must be part of the explanation why communities should participate in such mechanisms. Incentives such as capacity building, strengthening of property rights and improvements in social capital are some of the major benefits that are being seen as significant[20] and need strong institutional support for implementation.

From an ecosystem perspective, it would be ideal to reward good stewardship for the full spectrum of ecosystem services, rather than to focus on specific services. In the Indian context, it is proposed that four ecosystem services i.e. watershed services, biodiversity benefits, ecotourism (recreation) and carbon sequestration are focused upon owing to their scope and precision in estimating the economic value of these services compared to others. Moreover, the level of payments in most PES are not generally high enough to fully offset opportunity costs or cover transactions costs for the change in land use. It is thus essential for legal regulations to encourage bundling several ecosystem services such as carbon sequestration and adding soil organic matter or pollination and sell them together to minimize the transaction costs and make PES more efficient.[21]

IV.] INSTITUTIONAL FRAMEWORK

India has an institutional set-up which can be used for implementing PES mechanisms with minor modifications in the role of institutions involved (Figure 1). The Ministry of Environment and Forests (MoEF) is the central institution responsible for framing laws and policies for the environment sectors. A PES Cell can be established as a central agency for ensuring inter-sectoral coordination with different Ministries for PES mechanisms. Although the functions of proposed PES Cell and existing CDM (Clean Development Mechanism) Cell in MoEF would be similar to a certain extent, the PES Cell would be concerned about all the

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20. *See,* Porras, I., M. Grieg-Gran, and N. Neves, *All That Glitters: A Review Of Payments For Watershed Services In Developing Countries*, Natural Resource Issues, No. 11, London, UK: IIED, 2008.
21. Landell-Mills, *supra* note 13.

ecosystem services and work at a much broader level while the later is only associated with carbon sequestration and energy efficiency.[22]

The PES Cell can be assisted by a network of educational and technical institutions such as Wildlife Institute of India (WII), Indian Council of Forestry Research and Education (ICFRE), National Remote Sensing Agency (NRSA), Forest Survey of India (FSI), Indian Institute of Technology (IIT), Indian Institute of Forest Management (IIFM), The Energy Research Institute (TERI), National Institute of Industrial Engineering (NITIE), and Indian Institute of Tropical Meteorology (IITM) among others by providing support in policy recommendation, PES mechanism design and monitoring, reporting and verification (MRV).

State Departments such as Forest Department, State Pollution Control Board, Environment Impact Assessment Units and other allied departments can be entrusted with the responsibility of implementing PES mechanisms in their respective regions. These departments can coordinate with other departments and non-governmental organizations for implementing PES under the guidance of national policy and legal framework. The concept of PES can also be incorporated in the departmental programmes such as Forest Working Plans and Micro-plans. These departments can be linked to the network of supporting organizations for getting technical support in order to successfully implement PES mechanisms by customizing effective and efficient PES designs according to the local context.

V.] ROLE OF COMMUNITY INSTITUTIONS

Grass-root institutions such as Self Help Groups (SHGs), Joint Forest Management Committees (JFMCs), Watershed Users Associations (WUAs), Fisheries Cooperatives (FCs), Participatory Irrigation Management (PIM), Panchayats, and Cooperative Societies among others can undertake implementation of PES mechanisms at a local or regional level. The community institutions are ideally suited for this role as their scale of operation entails low transaction cost. These community institutions along with supporting state departments can ensure that the

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22. *See,* TERI, *Is India Ready to Imprlement REDD Plus? A Preliminary Assessment* (2009), New Delhi: TERI.

benefits from such mechanisms are equitably distributed among the local community.

With support from other academic and technical institutions identified earlier, capacity building programmes intended to build technical capacity and increase awareness on the importance of natural resources in local communities can be conducted.

Because PES mechanisms normally operate at a local level, Panchayats and other local-level community organizations can play a major part in implementing them in India. Panchayats also have the most suited institutional underpinning required for PES due to financial powers of levy and taxes which makes their position critical.

VI.] CONCLUSION

Payments for Ecosystem Services (PES) is increasingly being proposed as a promising conservation approach for ensuring internalization of environmental externalities. However, PES can only work with good governance in place, comprising an effective political, legislative as well as institutional system. Implementation of very few successful PES mechanisms in India; compared to South American and other Asian countries; reveals that the legal and institutional framework in India is not very conducive for PES mechanisms. Although the paper proposes modifications in legal and institutional system, it advocates that introducing specific PES provisions through amendments in the existing legislation would be more effective than creating different PES specific legislations. An institutional set-up has also been proposed which utilizes the expertise of all the stakeholders involved so as to create better enabling conditions for fostering PES mechanisms in India. It is also proposed that community organizations undertake implementation of PES mechanisms as their scale of operation involves low transaction cost.

Table 1 – Property Rights Attributes for Enabling PES

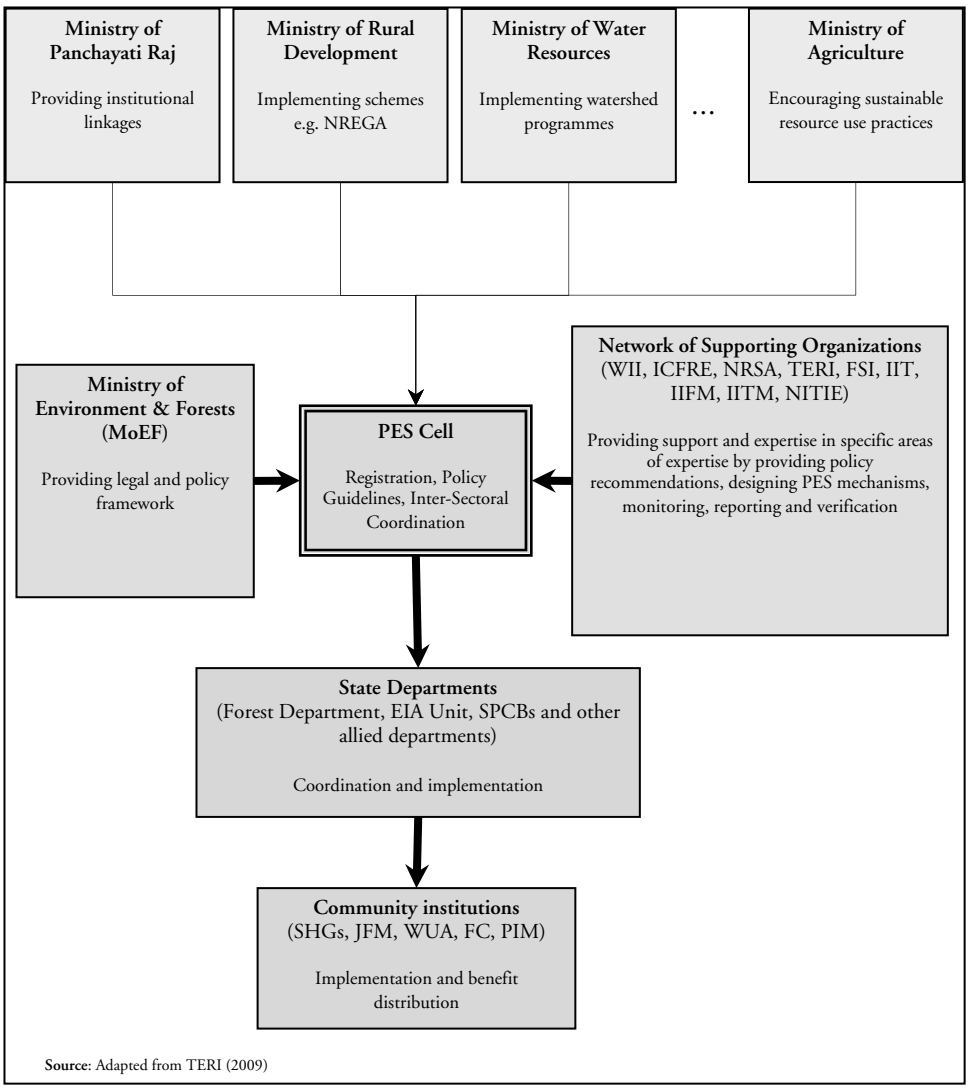
Property right characteristic	Description
Clearly defined	Nature and extent of the property right is unambiguous.
Verifiable	Use of the property right can be measured at reasonable cost.
Enforceable	Ownership of the property right can be enforced at reasonable cost.
Valuable	There are parties who are willing to purchase the property right.
Transferable	Ownership of the property right can be transferred to another party at reasonable cost.
Low scientific uncertainty	Use of the property right has a clear relationship with ecosystem services.
Low sovereign risk	Future government decisions are unlikely to significantly reduce the property right's value.
Source: (Murtough, Aretino, & Matysek, 2002)	

Table 2 – Existing laws, policies and programmes

Laws, Policies and Programmes		Key Points related to implementation of PES in India
Indian Forest Act, 1927	+	First comprehensive act for forest management; still used
	–	Does not support local community participation
Forest (Conservation) Act, 1980	+	Aimed to halt deforestation
	+	Compensatory afforestation amount (Net Present Value) has already been calculated and put into practice
National Forest Policy, 1988	+	Has laid foundation for participatory forest management
	+	Shift from revenue-oriented to conservation-centric forest management
Joint Forest Management (JFM) Guidelines, 1990	+	Involvement of local communities in forest management put into practice
	+	More than 100,000 FPCs managing 28% of country's forest area (MoEF & WII 2005, 41). These committees can provide the institutional support required for implementing PES.
	+	Income generation through conservation has been demonstrated to the local community
	–	Unaddressed issues: tenurial security, external influence in decision making, dominance of a particular caste or class within the committees, and financial sustainability (TERI 2009, 7)
National Environmental Policy, 2006	+	Advocates recognition of traditional rights of natural resources to communities
	+	For the first time recognizes the concept of ecosystem services and advocates PES

Laws, Policies and Programmes		**Key Points related to implementation of PES in India**
Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	+	Provision of tenure and other rights to individuals and local communities
	+	Could assist in implementation of and equitable incentive distribution from PES if implemented in a satisfactory manner
	–	Controversial act still struggling to differentiate between justified and unjustified claims
National Action Plan on Climate Change, 2008	+	Advocates afforestation of wastelands and degraded forest areas
	+	Recognizes the need for biodiversity conservation both within and outside Protected Areas
	–	Guidelines still awaited
	–	Money collected under CAMPA fund still unutilized
Biological Diversity Act, 2002	+	Acknowledges the need to respect and protect knowledge of local communities related to biodiversity
	+	Advocates sharing of benefits with local people as conservers of biological resources and holder of knowledge and information
	+	Advocates involvement of self-government institutions for implementation of the Act through committees
The Water (Prevention and Control of Pollution) Cess Act, 1977	+	The purpose of this Act is to levy cess on water consumed by certain categories of industry
	+	This money, presently used by SPCBs can be used to finance PES mechanisms in the region

Figure 1 – Proposed Institutional Model for Implementing PES in India



Source: Adapted from TERI (2009)

CLIMATE CHANGE LITIGATION IN INDIA: SEEKING A NEW APPROACH THROUGH THE APPLICATION OF COMMON LAW PRINCIPLES

Arindam Basu[*]

ABSTRACT

The increase in the number of climate change litigation has come under the public scanner in recent times. Climate change litigation is marred by the scientific, economic, political questions which are considered as significant impediments in devising apposite litigation strategy. This paper is an attempt at identifying the present legal position of climate change litigation in India and mapping an overall prospective future. For the same, the author has confined his study to two legal systems of the world- the Unites States of America and India. The article argues that climate claims will have a strong footing in India in years to come depending upon working out an objective legal strategy based on some of the common law principles like public nuisance and negligence. Although, for critiques climate change litigation based on common law theory may still appear uncertain, the potentiality of such suits cannot be overlooked in providing a new dimension in entire climate change discussion.

I.] INTRODUCTION

An appropriate legal strategy needs to be structured in order to deal with climate change problem and the same may prove to be a key assignment for the legal fraternity in years to come. The role of the judiciary is particularly important in interpreting the existing laws for formulating a new legal approach in the backdrop of growing impact of greenhouse gas emissions, and the ever increasing economic activities affecting every facet of human productivity, daily life and ongoing global climate change negotiations.

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Although, the basic mechanism of how carbon dioxide and other greenhouse gases warm the planet has been well known to us for decades,[1] climate change emerged as a firm international agenda only by the late 1980s.[2] Thereafter, it took the international community more than a decade to develop a comprehensive legal framework to address the climate change issue globally.[3] India's thriving economy and steadily growing emissions have made India one of the key players in climate change politics. This, in fact, underplays a critical fact, i.e. India's legal system has still not woken up to the scope of climate change litigation. Furthermore, the inability of the Indian judiciary's to handle such issues is another area of concern which has to be addressed adequately. It can be argued that common law actions like public nuisance or negligence can be the effective tools in the hands of judges to address the climate change issue in India particularly in the absence of articulated legislative provisions. A wide array of scholars, attorneys, and affected people are looking into the viability of these actions now.

This paper aims at identifying the present legal position of climate change litigation in India and mapping an overall prospective future. I have confined my study to two different legal systems in the world, United States of America and India because the first appropriately represents the affluent North and the latter its wanting Southern counterparts. These two prominent common law countries riding on the ethic of democracy have tremendous potentiality to shape world's legal ideas.

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1 David Hunter, James Salzman and Durwood Zaelke, *International Environmental Law And Policy* (2002, 2nd ed.), at 590.

2 David Freestones, *The International Climate Change legal and Institutional Framework: An Overview*, in Legal Aspects Of Carbon Trading: Kyoto, Copenhagen And Beyond (David Freestones et al. eds., 2009) at 5.

3 1992 United Nations Framework Convention on Climate Change, 1771 UNTS 107; S. Treaty Doc No. 102-38; U.N. Doc. A/AC.237/18 (Part II)/Add.1; 31 ILM 849 was adopted at the United Nations Conference on Environment and Development (UNCED) that set forth a structure for the control and reduction of greenhouse gases for the first time. In 1997, 160 nations met in Kyoto to negotiate reductions in greenhouse gas emissions pursuant to the terms of the 1992 United Nations Framework Convention on Climate Change. The resulting agreement named Kyoto Protocol to the United Nations Framework Convention on Climate Change, UN Doc FCCC/CP/1997/7/Add.1, Dec. 10, 1997; 37 ILM 22 (1998) sets forth specific limits on emissions and probably most debated international environmental law document at present.

Part I of this article initiates the debate by marking out the increasing popularity of climate change litigation worldwide and its conceivable future in India. Part II further narrates the potentiality of such litigation. Part III seeks to draw a broad framework for climate change litigation by discussing some of the cases that originated in United States of America. Part IV takes the discussion forward by analysing the feasibility of applying US experiences on Indian litigation scheme. Part V focuses on social and ethical aspects that influence climate change litigation and finally, Part VI concludes the paper.

II.] CLIMATE CHANGE LITIGATION: POTENTIALITY AND POSSIBILITY

Climate change litigation finds its roots in liability claims as civil society is becoming aware of the fact that human actions and the emission of certain greenhouse gases into the atmosphere can lead to grim consequences for the environment, property and human health. It creates the possibility of future litigation against governments or corporations engaged in commercial activities. Once commenced, it raises whole new legal challenges of which both plaintiffs and the defendants must be aware.[4] Climate change litigation can be spawned from:

(**a**) a cause of action based on nuisance or negligence where climate change is the causal factor, which may raise liability issues;
(**b**) an administrative law claim against a public authority challenging any action, inaction, breach of statutory duty or constitutional law or otherwise a failure on the part of the authority to regulate greenhouse gas emission properly;
(**c**) other legal causes of action arising out of growing public awareness of climate change matters which can include alleged breaches of advertising regulations and standards in the course of making claims in respect of climate change, or alleged failure by companies, their directors or officers to adequately report climate change and other environmental impacts affecting company performance which can

4. Jose A Cofre, Nicholas Rock, Paul watchman, Dewey & LeBoeuf, *Climate Change Litigation*, in Climate Change: A Guide To Carbon Law And Practice (Paul Q Watchman ed. 2008) at 280.

lead to shareholders derivative actions or other regulatory actions that are consequential in nature.[5]

In India, the first two possibilities are already being explored but in entirely different environmental contexts and not as part of climate change litigation. Broadly speaking, in India the citizen has a choice of the following remedies to obtain redress in case of violation of his/her environmental right:

(**a**) A common law action against the polluter including nuisance and negligence;
(**b**) A writ petition to compel the authority to enforce the existing environmental laws and to recover clean up costs from the violator; or
(**c**) Redressal under various Environmental Statues like Environment (Protection) Act, 1986, Water (Prevention and Control of Pollution) Act of 1974, Air (Prevention and Control of Pollution) Act of 1981 etc.; or
(**d**) Compensation under Public Liability Insurance Act, 1991 or the National Environment Tribunal Act, 1995 in the event of damage from a hazardous industry accident.[6]

Actions of nuisance and negligence are very common in India when it comes to check environmental pollution in the present scenario.[7] But unfortunately, none of them have been used so far to include climate litigation purely. Nuisance can be of two types, private or public. A private nuisance takes place when one uses one's property in a manner that harms the property interests of others. Theoretically, if a company uses its property in a way that harms others' property interests by contributing to global warming, it can be held liable under private nuisance. Climate change, however, is a broad problem that has less to do with defendants' use of their property and that involves much less direct "annoyance" with

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5. *Ibid*, 230.
6. Shyam Divan, Armin Rosencranz, *Environmentalllaw And Policy In India: Cases, Materials And Statutes*, (2002, 2nd ed.) at 87.
7. Among all these remedies, the writ jurisdiction is more popular. The action in tort is rarely used and the statutory remedies are largely untried.

"neighbours." Therefore, private nuisance does not seem like a good option for a climate change lawsuit. Public nuisance is a more appropriate remedy for climate change cases.[8]

III.] DRAWING INSPIRATION FROM AFFLUENCE: DOES THE MODEL WORK FOR US?

Over the last decade, the number of cases involving climate change has increased noticeably. Several cases have already been filed in national and international tribunals worldwide. United States has experienced a surge of this kind of litigation. *Massachusetts v. EPA*[9] was one such case and the U.S. Supreme Court's decision in the same has significantly altered the Government policy and re-drawn the litigation landscape. Massachusetts and several others brought claims against the U.S. Environmental Protection Agency (EPA) challenging the agency's decision not to regulate GHG emissions from motor vehicles under the Clean Air Act, 1963. Massachusetts contented that under the Clean Air Act, EPA had the responsibility to regulate any air pollutant including greenhouse gases that can "reasonably be anticipated to endanger public health or welfare."[10] The U.S. Supreme Court decided that the Clean Air Act, 1963 does give EPA the power to regulate.

This case is a typical example where the Supreme Court of U.S.A. decided an administrative law question whereby avoiding a much disputed issue of scientific evidence for climate change.[11] Although, administrative law cases are not subject to Daubert Standard[12] and the Federal Rules of

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8. David A. Grossman, *Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation*, 28 Colum. J. Envtl. L. 1, (2003) at 52.
9. 549 U.S. 497 (2007).
10. Sec. 202 (a) of Clean Air Act, 1963 [provides that "the Administrator shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare".]
11. Ryan Hackney, *Flipping Daubert: Putting Climate Change Defendants in the Hot Seat*, 40 Envtl. L. (2010) at 255.
12. *Id* at 265-269 (In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), the US Supreme Court established Daubert standard for the admissibility of scientific expert testimony. Daubert replaced the previous Frye Standard of "general acceptance

Evidence, they do help in making up the backdrop of climate change litigation in which common law actions proceed.[13] However, establishing scientific evidence in climate change litigation is an important step in deciding the standing of the parties.

In U.S.A., for climate change cases the courts are still reluctant to touch the scientific question. Dealing with nuisance is, though, not uncommon there. The first of such kind brought on the common law action of public nuisance was *Connecticut v. American Electric Power Co.*[14] In 2004, a coalition of states, private land trusts, and New York City sued a group of major electric power companies for their perpetration of climate change. They alleged that these power companies are the largest emitters of greenhouse gases (GHG) in the United States, collectively emitting 650 million tons of carbon dioxide each year; that carbon dioxide is the primary GHG; and that GHGs trap atmospheric heat and cause global climate change, which is an ongoing public nuisance that must be abated under federal or state common law. Plaintiffs sought a court order requiring defendants to cap and reduce their GHG emissions.[15]

The United States District Court for the Southern District of New York dismissed this case in 2005 as a non-justiciable political question before any scientific evidence could be presented.[16] However, in September 2009, restoring the case, the Second Circuit Court of Appeals reversed the District Court's judgment. It held the political question doctrine did not bar the Court from considering the case and all plaintiffs had standing to bring "public nuisance" lawsuit against power companies for injuries caused by climate change.[17] This decision does not address the final position

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in the field" with a two-prong test derived from Federal Rule of Evidence 702, which addresses "Testimony by Experts." To be admissible under Daubert, expert testimony must be both reliable and relevant. A court first must ask whether the scientific methodology underlying the testimony is reliable--is it "ground[ed] in the methods and procedures of science" and "supported by appropriate validation." while Daubert challenges have primarily worked to the benefit of defendants, there is no reason why plaintiffs cannot use them in climate change litigation where the plaintiff's position is supported by the weight of the scientific evidence.)

13. *Ibid,* 261
14. 406 F. Supp. 2d 265 (S.D.N.Y. 2005).
15. *Id*.
16. *Ibid,* 271.
17. *Connecticut v. American Electric Power Co.*, 582 F.3d 309, 314-15 (2d Cir. 2009).

though, as rehearing is still pending in the Second Circuit Court where the plaintiffs have opportunity to pursue their claims further.

Another significant case on climate change based on the ground of nuisance is *Comer v. Murphy Oil USA*[18] where a three-member panel of the Fifth Circuit Court revived a lawsuit filed by residents along the Mississippi Gulf coast against several corporations in the energy and fossil fuels industries, alleging they were responsible for property damage caused by Hurricane Katrina. Initially in 2007, the plaintiffs sought damages under the tort theories of unjust enrichment, civil conspiracy and aiding and abetting, public and private nuisance, trespass, negligence, and fraudulent misrepresentation and concealment. At the district court level, the defendants were successful in dismissing plaintiffs' complaint. The United States District Court for the Southern District of Mississippi granted the defendants' motions and dismissed the action on the ground that the plaintiffs did not have standing to raise political questions that should not be resolved by the judiciary. The Court also found that the harm was not traceable to individual defendants. On 16 October 2009, the U.S. Court of Appeals for the Fifth Circuit overturned a District Court dismissal in part, holding that the plaintiffs both have standing to raise at least three of the claims (nuisance, trespass, negligence), and that the claims are justiciable only to vacate the panel decision on March, 2010 deciding that it would itself consider the appeal from the District Court *en banc*.[19]

This recent development in *Comer v. Murphy Oil USA* is very important because this may set a parameter for climate litigation for the American courts in the future. Also it may provide an answer to the question whether a corporate entity can be made liable for catalysing devastating climatic incidents along with clarifying plaintiff's legal stand to bring a suit for such activities.

It is expected that scientific challenges may continue to affect climate change lawsuits based on public nuisance and negligence actions. It is also argued that plaintiffs may be successful by applying those common law theories. If it happens as expected, the damages and costs of adaptation

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18. 585 F.3d 855 (5th Cir. 2009); Full text is available at http://www.ca5.uscourts.gov/opinions/pub/07/07-60756-CV0.wpd.pdf (last visited April 22, 2010)
19. *See* also *Kivalina v. Exxon Mobil Corp*., et al., 2008 (Federal Common Law Public Nuisance 28 U.S.C. §§ 1331, 2201)

will be enormous and the interest in finding parties to pay those costs will likewise be enormous.[20]

IV.] LAWS AS THEY STAND: AN UNCULTIVATED QUARTER

Environmental jurisprudence in India is an uneasy mixture of "willingness to protect environment and lack of environmental awareness", "overabundant legislative efforts and slipshod enforcement process", "constant gross violation of basic human rights and intense protest by the victims and stake-holders." These jural opposites, connected to diametrically differing philosophies of democracy and socialism, provide an obscure picture of environmental law in India. The judiciary had remained as a bystander to environmental despoliation for more than two decades since the inception of modern environmentalism on Indian soil. It had started assuming a pro-active role only in 1980s. Since then development of Indian environmental jurisprudence has been heavily influenced by some of the most innovative judgments passed by the Indian courts.[21]

Locus Standi is an essential for initiating legal proceedings. According to the traditional rule, only a person whose own right was in jeopardy was entitled to seek remedy.[22] Furthermore the matter that comes before a court must be a justiciable matter. This created hardship because as per this rule, a person claiming a public right or interest had to show that he or she had suffered some special injury over and above what members of the public had in general suffered. Therefore, injuries which are diffuse in nature e.g. air pollution affecting a large community were difficult to redress.[23] This traditional *locus standi* doctrine was also detrimental for the

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20. Hackney, *supra* note 12, at 262
21. *See, M.C. Mehta v. Union of India*, AIR 1992 SC 382 (the Court gave direction to broadcast and telecast ecology programmes on the electronic media and include environmental study in school and college curriculum); *See* also *S. Jagannath v. Union of India*, AIR 1997 SC 811 (prohibiting non-traditional aquaculture along the coast); *See* also *T.N. Godavarman Thirumulkpad v. Union of India*, AIR 1997 SC 1228 (judicial supervision over the implementation of national forest laws).
22. Divan et al., *supra* note 8, at 134 (Stating that there are several narrow but notable exceptions to this traditional rule. For example, any person can move a writ of *habeas corpus* for the production of a detained person and a minor may sue through his or her parent or guardian.)
23. *Id.*

poor community of India as it disallowed any concerned citizen to sue on behalf of the underprivileged class in the court of law. Till date, the poor and underprivileged are unwilling to assert their environmental rights because of poverty, ignorance or fear of social or economic reprisals from the dominant class of community.[24]

The liberalisation of the *locus standi* in India came with the emergence of Public Interest Litigation (PIL) which allows any public-spirited individual or institution, acting in good faith to move the Supreme Court and the High Courts for writs under Articles 32 and 226 of the Constitution respectively for judicial redress in public interest in case of violation of fundamental rights of a poor or underprivileged class who because of poverty or disability cannot approach the court. In the last 20 years, judiciary has extended the reach of PIL to the protection of the environment. The judiciary has interpreted Article 21 liberally to include an unarticulated right, i.e. the right to wholesome environment and more precisely right to enjoy pollution-free water and air and more.[25] The court has also integrated a right to a wholesome environment with nascent but emerging principles of international environmental law e.g. polluter pays principle,[26] the precautionary principle,[27] the principle of inter-generational equity,[28] the principle of sustainable development[29] and the notion of the

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24. Ramchandra Guha, Juan Martinez Alier, *Varieties Of Environmentalism: Essays North And South*, (1997) at 37 (stating that Lawrence Summer's 'the poor sell cheap' principle also has relevance in India. The market through so-called 'hedonic prices', i.e. the decrease in the cost of properties threatened by pollution, would point out that locations where the poor reside are more suitable for toxic waste dumping or setting up polluting industries or constructing large projects than locations where the rich live. Poor people accept cheaply, if not happily, nuisance or risks which other people would be ready to accept only if offered large amount of money.)
25. Article 21, The Constitution of India; *See* also *Subash Kumar v. State of Bihar (1991) 1 SCC 598; See* also *Virender Gaur v. State of Haryana,* (1995) 2 SCC 577.
26. *See, Indian Council for Enviro-legal Action v. Union of India* (Bichhri Case), (1996) 3 SCC 212 (describing polluter pays principle); *See* also *M.C. Mehta v. Kamal Nath*, (2000) 6 SCC 213, 220.
27. *See, Vellore Citizens' Welfare Forum v. Union of India*, (1996) 5 SCC 647 (establishing precautionary principle); *Narmada Bachao Andolan v. Union of India,* (2000) 10 SCC 664, 727 (shifting the burden of proof to the industry).
28. *See, State of Himachal Pradesh v. Ganesh Wood Products* (1995) 6 SCC 363 (establishing principle of inter-generational equity); *See* also *Indian Council for Enviro-legal Action v. Union of India* (CRZ Notification case), (1996) 5 SCC 281.

state as a trustee of all natural resources.[30] Certainly, this list is not exhaustive and represents a small number of environmental cases that have reached the Indian courts. No doubt, there are few more environmental issues in India yet to be included in the domain of PIL and climate change is one of them.[31]

Commenting on public nuisance further, it is known that it arises from an unreasonable interference with the general right of the public. Remedies against public nuisance are therefore, available to every citizen.[32] In India, public nuisance so far has covered issues ranging from sewage cleaning problems to brick grinding operations, from hazardous waste management to untreated effluent discharges from factories. But climate change is still unexplored. It has to be further understood that in liability claims proceedings based on nuisance or negligence arising out of global warming, the plaintiff always faces problems establishing his standing because it is extremely difficult to set up a causal connection between the injury suffered by the plaintiff and defendant's emission of greenhouse gases. In United States, to establish standing in a Federal Court, a plaintiff must show that:-[33]

(**a**) a particular injury has been suffered;
(**b**) a causal connection exists between the injury and conduct complained of, so that the injury is fairly traceable to the challenged action of the defendant; and
(**c**) it must be likely, as opposed to merely speculative, that a favourable court decision will relieve the injury complained of.

In *Massachusetts v. EPA*, Massachusetts was entitled to 'special solicitude' because of State's special quasi-sovereign interest in protecting all the earth and air within its domain. Ruling in favor of Massachusetts,

29. *See, M.C. Mehta v. Union of India* (Taj Trapezium Case), (1997) 2 SCC 353 (establishing principle of sustainable development); *See* also *Narmada Bachao Andolan v Union of India*, (2000) 10 SCC 664, 727.
30. *See, M.C. Mehta v Kamal Nath*, (1997) 1 SCC 288 (stating that state as a trustee of all natural resources).
31. Lavanya Rajamani, *Public Interest Environmental Litigation in India: Exploring Issues of Access, Participation, Equity, Effectiveness and Sustainability*, Oxford Journal of Environmental Law, Vol 19 No 3, (2007) at 295.
32. *Ibid,*112.
33. Cofre *et al.*, *supra* note. 6, at 85.

Supreme Court of the United States held that Massachusetts, due to its "stake in protecting its quasi-sovereign interests" as a state, had standing to sue the EPA for potential damage caused to its territory by global warming.[34] It is surprising that in *Massachusetts* the question of standing was raised by the respondents first. The respondents used scientific uncertainty regarding climate change together with the alleged overall magnitude of the crisis to dispute petitioners' claim. They contended that the impacts at state and local levels are too speculative because of the extent of both the space and time involved. Petitioners' hypotheses, each of which is the subject of an active scientific debate, are reduced to conjecture by the inherent uncertainty of global events that will unfold between now and the time of the predicted injury.[35]

The petitioners' disagreement on the issue was prominent as they aptly pointed out issues like rising sea levels, depletion of the ozone layer contributing more to the global warming and melting of glaciers. All these are not trivial in nature and they affect us very adversely. The Supreme Court opined that petitioners had fulfilled the standing requirements. Massachusetts was not precluded from having a standing in the case because of the global nature of climate change.[36]

The point that is noteworthy here is promoting the idea of environmental trusteeship. State is the trustee of all natural resources within its territory. In India, similar resonance is found in a case where Supreme Court declared that 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 areas. The State as a trustee is under a legal duty to protect the natural resources.[37] This case illustrated a situation where a resort was built by Span Motels, on the bank of the Beas River between Kullu and Manali

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34. *See,* Massachusetts v. EPA, *supra* note 10, at 17; Complete text is available at http://www.supremecourt.gov/opinions/06pdf/05-1120.pdf (Last visited April 21, 2010).
35. Hari M. Osofsky, *The Intersection of Scale, Science, and Law in Massachusetts v. EPA*, 9 Or. Rev. Int'l L. 233, 245-246 (2007).
36. *Ibid*, 246-247: Although the Court's holding on standing narrowly focuses on the interests of state parties, its approach to them scales down the problem of climate change and its regulation; this "global" phenomenon can cause harm at a state level and choices at a federal level influence the risks faced by states. \
37. M.C. Mehta v. Kamalnath, *supra* note 31.

in Himachal Pradesh. After getting the possession of the land which was in fact the part of protected forest, Span Motels carried out dredging and construction of concrete barriers on the bank of the river which in fact, changed the course of river causing ecological trouble. Consequently, Span Motels was directed to pay a pollution fine. Although, this judgment was on a different situation, it is opined that the same principle can be applied to climate change litigation as well. Judiciary in India by and large has placed environmental right on a high pedestal. That an ecological crisis precedes everything is reflected in another groundbreaking judgment by Supreme Court where it remembers the American tradition that puts government above big business, individual liberty above government and environment above all.[38]

Also, remedies available in India for public nuisance, in general, are impressive. Section 268 of Indian Penal Code, 1860 provides the definition of public nuisance. According to the Section "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."[39] It again provides in the same Section that "a common nuisance is not excused on the ground that it causes some convenience or advantage." Persons who conduct 'offensive' trades and thereby pollute the air, or cause loud and continuous noises that affect the health and comfort of those dwelling in the neighbourhood are liable to prosecution for causing public nuisance.[40] This, however, is less attractive because the penalty for is merely Rs. 200, which makes it pointless for a citizen initiate a prosecution under Section 268 of Indian Penal Code, 1860 by a complaint to a magistrate.[41]

A much better remedy is available under Section 133 of the Code of Criminal Procedure, 1973 which deals with the Conditional order from a magistrate for removal of nuisance. The Section empowers a magistrate to

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38. *See,* Tarun Bharat Sangh, Alwar v. Union of India (Sariska Case) writ Petition (Civil) No. 509 of 1991.
39. Section 268, of Indian Penal Code, 1860
40. Divan et al., *supra* note 8, at 112.
41. A complaint may be made under Section 190, of the Code of Criminal Procedure, 1973. *Id.*

pass a 'conditional order' for the removal of public nuisance within a fixed period of time. The Magistrate may act on information received from a police report or any other source including a complaint made by a citizen.[42] This Section provides an independent, speedy and summary remedy against public nuisance.[43] In the famous judgement of *Municipal Council, Ratlam v. Vardhichand*,[44] The Supreme Court of India has interpreted the language as mandatory.[45] Once the magistrate has before him the evidence of public nuisance, he must order to remove such within a specified time.[46] This is done with regard to water pollution where the Court directed the municipality to take immediate action to remove the nuisance. The same principle can also be applied in case of air pollution and it is not at all uncommon for the court in India to come down heavily on industries for polluting air. For example in Taj Trapezium Case[47] the Supreme Court of India forced certain polluting industries to relocate themselves because emission from those factories was damaging Taj Mahal, the famous ancient monument. The establishment of causal connection between the emission from factories and the damage sustained by the monument was relatively easy as the Court relied on an expert's report.[48]

Now, imagine a situation where a town was pristine and pollution free. The people used to enjoy good health, un-contaminated food and water and cool weather even in hot summer. After some time an industrial belt was established nearby. As the industries starts operation the atmospheric pollution is also beginning to pile up. The weather of the locality is showing signs of being altered. The water supply, vegetation and fertility of the land are among things also affected. Health hazards like lung disease has become common. If these facts are provided to the court what it should do? Will it decide the matter simply on the basis of economic gain

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42. Section 133, of Code of Criminal Procedure, 1973.
43. Divan et al., *supra* note 8, at 112.
44. AIR 1980 SC 1622.
45. *Id.*
46. *Id.*
47. *M.C. Mehta v. Union of India*, (1997) 2 SCC 353.
48. The court was assisted in its efforts to improve air quality around the Taj Mahal by the reports prepared by the NEERI (National Environment Engineering Research Institute), Gas Authority of India Limited (GAIL) on the supply of fuel gas to industries in the area and the study conducted by the Vardharajan Committee, which was constituted in May 1994, by the Ministry of Environment and Forest of India.

that those industries are generating for the country whereby avoiding the available facts and scientific data? Or will it rely on that data which is 'reliable and relevant' and the report of some expert to establish the causal connection between the industrial activities, atmospheric pollution and the climate change? Or even if the scientific data is unavailable or incomplete can the court still decide that this is a fit case for public nuisance? I have no doubt that the same principle which is used in Ratlam Case or Taj Trapezium Case can be used here as well. Hence, the respective authority has to work diligently to remove the cause of nuisance or court may order the polluting industry to alter its process or shut down or relocate or impose pollution fine on them.

The same can be said about an action for negligence that may be brought to prevent greenhouse gas emission. In an action for negligence, the plaintiff must show that the defendant was under a duty to take reasonable care to avoid the damage complained of and the defendant has made a breach of that duty resulting in the damage to the plaintiff. Negligence theory is closely connected to the concept of product liability as a manufacturer may be held liable in tort when it places a product on the market, knowing that it is to be used without inspection for defects, and the product proves to have a defect that causes injury to a person.[49]

By and large, this type of claim appears to be a suit for a defect in design. The extent of a manufacturer's duty is defined by rational prudence and knowledge of potential risk of a product. It is the duty of the manufacturer to launch that product in the market which is designed safe for consumption by the potential buyer. However, climate change plaintiffs' may stumble at a roadblock if the defendants take the strong argument of state of the art facilities available at their manufacturing site. But at the same time, it is difficult to believe that manufacturers are unaware of the impact of their products on global warming. Though, they can always argue that their duties are usually restricted to those who are likely consumers but, when the products in question are automobiles, power, or fossil fuels, it is fair to say that virtually everyone is a foreseeable user.[50]

An act of negligence may also constitute nuisance if it unlawfully interferes with the enjoyment of another's right in land. It may also breach of the rule of strict liability if the negligent act of defendant allows the

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49. Grossman, *supra* note 10, at 47.
50. *Ibidd*,48.

escape of any dangerous thing which he has brought on the land. Establishing causal connection between the negligent act and the plaintiff's injury is probably the most problematic link in pollution cases[51] and in climate change matter it is even more difficult because of uncertainty of scientific data.

Further, looking into some of the environmental legislations, I venture to say that there are some provisions that can be very well used by the plaintiff in climate change litigation. For example, Environment (Protection) Act, 1986, an umbrella legislation designed to provide a framework for Central Government coordination of the activities of various central and state authorities established under previous laws, such as Water (Prevention and Control of Pollution) Act of 1974 and Air (Prevention and Control of Pollution) Act of 1981, in Section 2 (a) defines environment which "includes water, air and land, and inter-relationship which exists among and between water, air and land and human beings, other living creatures, plants, micro-organism and property."[52] Sec. 2 (b) of the Act, provides that "environmental pollutant means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be, injurious to environment"[53] In Sec 2 (c) it again provides that "environmental pollution means the presence in the environment of any environmental pollutant."[54] Air (Prevention and Control of Pollution) Act of 1981 is the principle statute that addresses air pollution problem specifically in India. The definitions of 'air pollutant' and 'air pollution' is very much similar with Environment (Protection) Act, 1986 with only addition that Air Act, 1981 does not provide specific emission norms and the same is provided under Environment (Protection) Act.

Moreover, establishing the causal connection between damage and emission by industries will be much easier if the court looks into the existing emission norms for different localities set by the government under various environmental statues.

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51. Divan et al., *supra* note 8, at 100
52. Sec. 2 (a) of Environment (Protection) Act, 1986
53. *Id.*
54. *Id.*

V.] SOCIAL AND ETHICAL DIMENSION

Climate litigation encompasses ethical, scientific, economic, social, and other complexities of the age. Lawyers bear the responsibility of making their clients aware of how climate change may have an effect on their rights. At the same time, as citizens, we have responsibilities of our own.[55] We need to be more conscious about intergenerational equity and our present and future responsibility, social, ethical and legal that may determine the potential winners or losers in climate change litigation.[56]

My selection of the United States and India presents an interesting and contrasting social backdrop in this regard. As an ardent supporter of democracy, the United States expects its courts to remain reliable and adhere to democratic principles. No doubt there is some uncertainty about identification of democratic principles in environmental issues, climate litigation in particular.[57] The discussion there is mainly scaled down to who should be making decisions regarding climate change. Is it the court that should determine rights and responsibilities? Or should they leave all such choices to Congress or government agencies? Or should the citizens be allowed to challenge governmental action or inaction through the courts?[58]

India, however, is still silent, as I have already suggested, on this issue. The trend in the United States may certainly be branded as a new variety of environmentalism addressing the more complex and contentious environmental problems like climate change for future generation. This is understandable as the triumph of environmentalism is very much reflected in laws it has repealed or enacted or altered nowhere more effectively than in United States.[59] Political scientist Richard Inglehart has described it as post materialistic trend.[60] In India, on the other hand, reaction against environmental degradation is mainly influenced by unequal exchange, poverty and population growth.[61] Climate change as a recent phenomenon

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55. *See,* Marilyn Averill, *Climate Litigation: Ethical Implications and Societal Impacts*, 85Denv. U. L. Rev. 899, 900 (2008).
56. *Ibid*.
57. *Ibidd,* 908.
58. *Id*.
59. *See,* Ramchandra Guha, *Environmentalism: A Global History*, (2001, 2nd rep.) (discussing the history of environmentalism).
60. Guha et al., *supra* note 25, at 34.
61. *Id*.

is yet to form a part of mainstream litigation here. It is undeniable that judicial activism of India in environmental matters actually has shaped the environmental law tremendously and owes its debt in many ways to the active social movements. This may be the reason why, in spite of possibilities, the nuisance or negligence or others yet to encompass climate change in them.

VI.] CONCLUSION

For India the egotistical propaganda regarding the urgent need for development has remained constant since Stockholm. Indeed, no one would dare to argue that the desire was unjust thirty or even fifteen years ago. But one can easily put forward a self-assessing question now: Has anything changed in 37 years? In the era of free trade with an expanding market, India is one of the hotspots for global economy. Consumer society in India is growing rapidly and so is the population of the country which is outweighing economic gain. One side of the coin represents the affluence and the other, the insidious misery of millions of the wretched poor inundated by "effluents of affluence". Certainly, the meaning of development becomes paradoxical here unless backed by strong sense of self-determination. Knowing one's environmental rights is of primary importance particularly in the milieu of rapid economic activities giving birth to new and complex ecological problems almost every day. This article only sought to outline a broad spectrum of the future of climate change litigation in India. The strategies discussed are not exhaustive yet may be treated as a starting point of the discussion. The prosperity ahead truly depends on the growing awareness of the common people and fashioning of foolproof risk management techniques. In the middle of the locus standi controversy, both plaintiffs and defendants acknowledge the importance of scientific data in legal schemes. Indeed, keeping in mind the growing importance of science, to establish public nuisance or negligence, the parties, lawyers and judges are needed to established a more simply structured standing doctrine.

SUSTAINABLE DEVELOPMENT: JACK OF ALL TRAITS MASTER OF NONE?

Aida Teshome[*]

ABSTRACT

It was not until 1992[1]*, that the concept of sustainable development was recognised as "one of the most urgent subjects of international policy"*[2]*, comprising three major goals – economic development, social development and environmental protection. However, many opponents of sustainable development believe that sustainable development embraces a 'jack of all trades- master of none' attitude and lament that, with regard to environmental protection, the concept is a useless instrument. The issue being the practical implementation of the concept is very difficult on account of its vague and imprecise definition and of the lack of procedural guidance. However, how legitimate would a universally applicable regime of sustainable development be and, again, who would have authority to make those rules? Would a one- size- fits- all definition be most appropriate or is a more equitable approach required? While discussing different opinions on sustainable development throughout the essay, a set of opposing paradigms will become apparent, which the author endeavours to depict in the following dichotomies:*

greens/ environmentalists vs economists
limits to growth vs sustainable development
strong sustainability vs weak sustainability
human-centred anthropocentrism vs human- instrumental anthropocentrism
north vs south
normative vs technical

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1. United Nations Earth Summit in Rio de Janeiro
2. Graciela Chichilnisky, *What is Sustainable Development?*,73 Land Economics 467 (1997).

The thematic scaffolding of this paper is as follows-

At the outset, I will describe the nature of sustainable development as a concept and try to illustrate the root of its definitional predicament. I will aim to show that it is difficult to accommodate both environmental protection and economic development with an equal and balanced strength under the umbrella of sustainable development, however, I submit, that regarding the two as entirely independent from each other would create an artificial and untenable view of the world's status quo.
Following this, I will examine some theoretical approaches to sustainable development. Subsequently, I will discuss the impact sustainable development has on the divide between the global North and South, and again, question whether a more stringent and uniform application of the concept would be beneficial for environmental protection and in how far the application of such a concept would be justifiable.
I will conclude this paper with the argument that, although the concept of sustainable development has many flaws and uncertainties in its nature, it is not completely useless for the pursuit of environmental protection. After covering the last dichotomy, i.e. normative vs technical, I will suggest that sustainable development has not merely succeeded in re-emphasising the importance of environmental protection as a normative value, but it has also begun "a serious [practical] move from ideal to reality"[3]. Finally, I will submit that difficulties in the implementation of the concept mainly stem from procedural and planning failures, rather than from the nature of the concept's definition.

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3. Dryzek and Schlosberg.*Debating the Earth. The Environmental Politics Reader,* (1998) at 280.

I.] NATURE OF SUSTAINABLE DEVELOPMENT

a. *First Level*

Many academics have drawn comparisons between the nature of concepts such as democracy, liberty or social justice and sustainable development. Jacobs calls this category of concepts "contestable concepts,"[4] which have a structure that is twofold. In the first level "core ideas"[5] of the concepts are expressed in a very "unitary" and "vague" manner. Jacobs argues that the latter, however, does not render the concepts "meaningless or useless." Although, such concepts are very general on their first definitional layer, Jacobs recognises the overarching normative value of the first level. He argues that at this stage the meaning of contestable concepts is widely uncontested, and the core ideas are regarded as given and "fixed [which] cannot now be changed through rational argument."[6]

The definitions of sustainable development, which are generally accepted in the first level sense, are found in international key instruments. In 1987, the *Brutland* report[7] recognised the deterioration of the environmental condition and introduced the idea of "sustainable development", advocating for development, which "seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future."[8] The second key definition, also known as the *Caring for the Earth* definition, declares that sustainable development aims at "improving the quality of life while living within the carrying capacity of supporting ecosystems".[9] Further international key documents, such as Agenda 21[10] and the Johannesburg Declaration on Sustainable Development[11] emphasise the importance of the "eradication of poverty", participation, intergenerational and present equity as core goals of the concept.

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4. Dobson, *supra* note 42, at 25.
5. *Ibid*.
6. *Ibid*, 26.
7. A result of the UN World Commission on Environment and Development, 1987.
8. WCED, 1987: 40
9. Gland, Switz., World Conservation Union, UN Environment Programme and World Wide Fund for Nature, 1991.
10. Paper resulting from the Rio Earth Summit, 1992.
11. Paper resulting from the Johannesburg World Summit on Sustainable Development, 2002.

Many greens argue that this radical shift from focusing primarily on environmental protection to declaring poverty eradication as an overriding priority places "human beings and human welfare above concepts of environmental or ecological sustainability."[12] Arguably, sustainable development of the past 20 years has broadened the space for economic and social development but narrowed it for environmental protection. It seems that although advocates of the theory argue that sustainable development [ideally] harmonises the tensed relationship between the three components to create a perfect equilibrium, even on the first definitional level friction between the different forces exist. It occurs to be difficult to understand why merely placing the three elements under one umbrella would result in a harmonic relationship. Numerous international documents of the past 20 years have revived a sense of competition between the three main elements, and many, especially greens and environmentalists, claim that environmental protection often loses out.

The choice to promote or demote the importance of a specific aspect of sustainable development seems to be ultimately determined by politics. I will elaborate on this in the following section.

b. Second Level

Definitional problems arise when considering Jacobs' so called "second level" of contestable concepts:

"*This is where the contest occurs: Political argument over how the concept should be interpreted in practice*."[13]

It is probably best understood when referring back to the analogy with democracy mentioned earlier. Although the first- level meaning of democracy seems clear to, arguably, most people, its second layer, i.e. the definitional layer that is required when applying the concept in practice, is extremely unclear and differs wherever it is applied. Questions as to the form of democracy, e.g. deliberative or direct, the type of voting system or the exact powers of and mutual control mechanisms between bodies acting within democratic regimes, are ultimately resolved and determined by the political tendencies and persuasions of the predominant political power and prevalent value system within a specific country. The unclear, flexible and

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12. Dryzek, *supra* note 9, at 267.
13. Jacobs, *supra* note 7, at 25.

inconsequent nature of democracy has rendered many to believe that democracy is a myth, which is contradictory, unascertainable and unrealisable. Jacobs argues that "alternative *conceptions*"[14] also exist in the discourse on sustainable development. However, he does not believe that this renders the whole concept a deception. Instead, he claims that the possibility to understand sustainable development in "differing ways"[15] is merely a characteristic of the concept's second layer. Nevertheless, he agrees that at that stage "disagreements over the 'meaning of sustainable development' are not semantic disputations but *are* the substantive political arguments with which the term is concerned."[16]

Indeed, the political character of the concept may render the latter *unsustainable*, in the sense that people may avoid it or that the concept loses its authoritative power due to its lack of certainty and the possibility of it being abused for political propaganda:

"*SD is in real danger of becoming a cliché … a fashionable phrase that everyone pays homage to but nobody cares to define… better articulation of the terms concepts, analytical methods and policy- making principles… is necessary if SD is to avoid either being dismissed as another development fad or co- opted by forces opposed to changes in the status quo*."[17]

It, furthermore, allows "radicals"[18] to enter the debate of environmental protection and enables them to abuse the concept in order to push forward their own agenda. This results in environmental protection to be sidelined as one of the main objectives within the concept. Lafferty exemplifies this argument by pointing out that "25 out of the 40 chapters [of the UN *Agenda 21* action plan] are devoted to issues *other than* biogeospheric degradation."[19] He holds that Agenda 21 lays just as much emphasis on "environmental degradation and conservation"[20] as it is concerned with "political, economic and financial aspects of sustainable development". Maria Lee counter- argues that exclusion of radical views is not what the concept is aiming at:

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14. *Ibid*.
15. *Id*.
16. *Ibid,* 26.
17. Carter, *supra* note 5, at 618.
18. Holder and Lee, *Environmental Protection, Law and Policy*, (2007, 2nd ed) at 257.
19. Dryzek, *supra* note 9, at 272.
20. *Ibid*.

"*The potential to stimulate debate is perhaps the most valuable contribution of sustainable development to environmental policy, […].*"[21]

Arguably, radicals are tamed as sustainable development creates a platform for public participation, establishing a more balanced representation of the differing views in the decision- making process. Since the appearance of sustainable development, public participation has become a strong feature of the decision- making process concerning environmental issues in the UK. There are several domestic instruments in the UK[22] but also international treaties, such as the Aarhus Convention, which oblige the decision- making bodies to inform the public and consider their opinion. Whilst this is a great achievement for sustainable development proponents, some deep greens argue that extensive public participation may have negative repercussions on what should be the main objective, i.e. environmental protection:

"*[…] if public participation does successfully introduce a plurality of perspectives into decision making, one result could be unduly complex solutions, which attempt to incorporate incompatible positions*."[23]

However, other than promising a more democratic process of environmental law, allowing the public to participate to a great extent does not necessarily guarantee a better outcome for environmental protection and might even be of disadvantage for environmental protection. The public may, for instance, lack sufficient knowledge of environmental issues or may even participate as a *consumer* rather than a *citizen*[24]. Moreover, large interest groups, particularly industries, with objectives, that very often conflict with the idea of environmental protection, may enjoy a larger stake in the decision making process.

The alternative to an inclusive approach would seem to either allow sole authorities or a very limited number of people or groups to be actively engaged in issues concerning environmental protection. This, however,

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21. Maria Lee, *Eu Environmental Law: Challenges, Change And Decision-Making*, (2005, 1st ed.) at 47.
22. E.g. the Environment Agency's obligation to include public opinion.
23. Holder, *supra* note 24, 132.
24. *Ibid,* following Sagoff's rationale individuals have two kinds of preferences: those made as a consumer, who is characteristically driven by "selfish" (Dryzek, *The Politics of the Earth: Environmental Discourses,* (1997) at 95) materialistic values, or those made as a citizen, who is motivated by "collective, community- orientated values" .

seems unjustifiable, considering that many questions concerning environmental protection remain unresolved even by science. Events in the past have shown that expert advice is not always correct and following merely their advice may cause serious damages to the environment.[25] Thus, I submit, that public participation is potentially advantageous for environmental protection, as long as those interest groups whose aims pose threats to the environment are held at bay and are not given excessive power. The latter frequently poses a challenge, due to the strong financial and political powers of those interest groups, i.e. large industries or governments. However, it appears that this problem is not necessarily an outcome of the concept of sustainable development *per se*, but is rather linked to the poor quality of some of the legal instruments, created for the furtherance of public participation and the strategies of international, regional and national bodies to implement the latter. For instance, the implementation of the Aarhus Convention at the EU level has the tendency to exclude certain groups of the society.[26] Several provisions in the convention and EU legislations,[27] but also the EU justice system itself limit the realistic inclusion of a breadth of people.[28] The problem here lies not only in the predominantly economic interests of the EU, but also in the exceptional nature of environmental degradation and law. Effective environmental protection is almost impossible to be achieved by using the current EU justice system. It requires different treatment and, thus,

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25. Examples for failure of science/ only taking into account one source of knowledge:
    1. The UK government followed only expert opinion and announced that the mad cow disease had no link with CJD. This turned out to be wrong. Following this embarrassment, the government started emphasising the significance of the public opinion.
    2. Scientists programmed their computers in such a way that harmful CFC levels would not be recognised by their computers. Thus, the depletion of the ozone layer was only discovered much later, when science had been revised and at which point much harm had already been caused to the environment.
26. In particular the poor and less educated.
27. E.g. Article 4 (8) of the Convention, which allows public authorities to demand charges for providing environmental information and the weak and wide interpretation thereof delivered by the ECJ.
28. For instance, the ECJ does not permit collective claims with and only recognises locus standi of individuals, who have been directly affected. However, environmental claims usually affect more than just one person.

environmental protection through public participation at EU level may call for institutional reforms within the EU justice system itself.

A further definitional problem according to Jacobs is the fact that there is not a "single and precise meaning"[29] that has been agreed upon and identified as the definition of sustainable development. In addition to the now well established broad definitions, such as the Brutland definition and others mentioned above, domestic and international agreements and documents have also contributed to form an –inexhaustible, it seems, - "gallery"[30] of definitions: the *Blueprint*[31] report offers over 40 definitions, in the ICJ *Case Concerning the Gabcikovo- Nagymaros Dam*[32] judge Weeramantry gave a very broad definition mentioning virtually all fields within international law.[33] Jacobs believes that from a "*technocratic*"[34] point of view this "operational"[35] deficit renders the practical implementation of the concept very complicated, complex and difficult.

c. Concept or Principle?

In the *Gabcikovo* case, judge Weeramantry submits that sustainable development is "more than a mere concept… [but] … a principle with normative value."[36] Arguably, his position is correct and sustainable development has gained through various international treaties and documents a normative character in international law. Whilst greens may argue that the objective of environmental protection has lost strength in the attempt of an integrative approach to development, it may be justifiable to say that through the concept of sustainable development environmental protection has achieved a greater legal force in international law. I will return to this point in my conclusion.

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29. Jacobs, *supra* note 7.
30. *Ibid*.
31. Pearce, Markandya and Barbier, *Blueprint for a Green Economy*, (1989), 173- 185.
32. Gabcikovo-Nagymaros Project (*Hungary v. Slovakia*), 1997 I.C.J. (Sept. 25).
33. Alan E. Boyle and David Freestone, *International Law and Sustainable Development*, (1999, 1st ed.) at 25.
34. Jacobs, *supra* note 7.
35. *Ibid*.
36. Gabcikovo, *supra* note 38.

II.] DICHOTOMIES

Due to the ultimately political nature of sustainable development a number of opposing and much debated paradigms, presented above in the dichotomies, exist. I will now engage with each of the dichotomies in the context of the inherently political nature of sustainable development.

a. *Environmentalists Vs Economists And Limits To Growth Vs Sustainable Development*

As explained above, deep greens condemn the concept of sustainable development as it allows issues other than purely environmental ones to be taken into account in the discourse on environmental protection. Not only deep greens, but most opponents of the concept regard the relationship between environmental protection and economic development, as it is created under the umbrella of sustainable development, as controversial, artificial, unequal and unbalanced. The interests of groups who promote environmental protection very often conflict with those of economic lobbyists and interest groups. In this competition, the latter are usually the 'winners' as they are often large, financially powerful industries or governments, leading to the sidelining of environmental protection.

A further criticism is that the integrative approach taken in sustainable development allows the application of technological and economic solutions to environmental degradation. The technological solution is defined by Gerrett Hardin as "one that requires only a change in the techniques of the human values or ideas of morality."[37] Similarly, in the *Blueprint* report the economic rationale for environmental protection is explained as follows. It is based on the belief that rather than appreciating the environment for its intrinsic values, it is economically valuable as an "asset". The importance of these assets are observed on the market, controlled by the market rules of offer and demand and measured by placing a monetary value on them. Once the economic importance of the asset is determined, policies should be implemented to preserve that asset. In other words, the economic rationale only protects a specific ecological system if it is found worthy of being protected due to its high demand as an economic asset.

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37. Dennis. L. Meadow, *Dynamics Of Growth In A Finite World,* (1974, 1st ed.) at 150.

The economic solution bears two major faults. Firstly, a solution of this kind will lead to lack of protection of many ecological systems, which may not be regarded as an important asset in economic terms. This does not only constitute a problem for those who believe that nature deserves to be preserved and protected due to its intrinsic value, but it may also have a karmic effect on the economy. Ecological systems are interconnected and if damage is caused to one, another one may consequently be affected. The degradation of many ecological systems, which may not be regarded as worthy of being protected, or which are affected as the result of a spill- over effect, have direct effects on humans, especially human health. Results are that governments will have to spend vast amounts of money on the health system and on adapting human lifestyles to changes in the environment, e.g. to new environmental hazards. This may have a negative effect on economic growth.

Secondly, many economic solutions for environmental protection do not actually tackle environmental degradation, but are merely means of circumventing legal liability. Good examples for this are the regional[38] and international[39] greenhouse gases trade- off regimes. Under these regimes, states or individual industries are given a maximum allowance of greenhouses gases emissions. Governments create "transferable property rights"[40] on pollutant units and enable the latter to be traded between states and firms, developing a "brand new market."[41] This highly controversial regime seems to focus on finding ways to legitimise pollution rather than eradicating pollution for the sake of environmental protection.

Deep greens argue that technological and environmental solutions for environmental protection will always fail since they do not touch upon the root cause of the environmental predicament:

"*[…] green movement [argues] for more profound changes in social thought and practice- changes in human values and ideas of morality.*"[42]

To provide scientific proof, greens often refer to two reports[43] issued by the Club of Rome, which performed computer- based experiments to

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38. *See,* EU Directive 2003/87/EC.
39. *See,* Kyoto Potocol, 1992.
40. Holder, *supra* note 24, at 424.
41. *Ibid.*
42. Andrew Dobson, *Green Political Thought,* (2000, 3rd) at 65.
43. Limit to Growth Reports, 1974, 1992.

investigate whether unlimited economic growth will cause a threat to the environment and humans, and whether there is a technologically proven *limit to growth*. In the experiment the computer simulated a number of situations with differing variables, such as unlimited economic growth, greater resource availability, applying of technological strategies, etc, at all times assuming "no major change in the physical, economic or social relationships that have historically governed the development of the world."[44] All world models ultimately collapsed, due to either resource depletion, overuse of land or pollution. This lead to the Club's conclusion that-

"*[t]he application of technological solutions alone has prolonged the period of population and industrial growth, but it has not removed the ultimate limits to that growth*."[45]

The Club suggests that technological solutions merely scrape the surface of the "*essential* problem, which is exponential growth in a finite and complex system"[46] and holds that increasing the use of technological means to retain growth, will always ultimately undermine "the [positive] effects of these technologies."[47]

Another argument used by deep greens to support the *Limits to Growth* theory is that environmental degradation happens at such a speed and whilst some situations may appear to be safe today they could become dangerous within very little time. By the time we discover the danger it may be too late to prevent the harm that is caused to the environment and to humans. Whilst this seems to be a valid argument, contrary to the general opposition of greens against the concept of sustainable development, I submit that since its application it has, in fact, promoted and facilitated mechanisms, which work to prevent the environmental harms. The Precautionary Principle, for instance, is a norm, which can be used legally to forebear actions, in situations where science is uncertain about environmental consequences of them. The Principle introduces a procedure whereby potential damage of unforeseeable threats to the environment can be considered at a time *before* the act in question is done and, thus, may be

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44. Dennis, *supra* note 43, at 124.
45. *Ibid*, 41.
46. *Ibid,* 45.
47. Donella H. Meadows, *Beyond The Limits: Global Collapse Or A Sustainable Future*, (1992, 1st ed.) at 174.

avoided. Therefore, the Principle is a good example of sustainable development's attempt to strengthen the objective of environmental protection within the concept and to even out the unbalanced power-relationship between environmental protection and economic development..

Finally, deep greens complain that the protection of one ecological system under sustainable development is often treated separate from the protection of another. Many national and international agreements allow industries to go forth with specific actions if they manage to decrease the level of damage they do to one particular ecosystem. For instance, the Polluter Pays principle and similarly greenhouse gas emission trading regimes allow industries to continue their activities as long as they restrict pollution of the air. However, these regimes fail to recognise that particular industrial activities may have a negative impact on other ecosystems, too, which are not protected by the regimes. Furthermore, ecosystems themselves are inherently interrelated, thus regimes under which pollution, for instance, is only lowered slightly, other ecosystems may remain affected and damaged through the contamination of the air. Trying to solve one aspect of environmental degradation "does not necessary mean solving the rest."[48] It seems that a more holistic approach to environmental protection should be taken, which recognises the interrelation and "complexity of the global system."[49]

Holder and Lee argue that the UK has responded to the complaints voiced by greens in a way that it has "come closer to accepting that limits may ultimately have to be respected."[50] In *Securing the Future* the government listed "living within environmental limits"[51] as one of their "guiding principles for sustainable development"[52]:

"*Environmental limits are at the level at which the environment is unable to accommodate a particular activity or rate of activities without sustaining unacceptable or irreversible change. […] Decisions that involve*

48. Dobson, *supra* note 42, at 67.
49. *Ibid.*
50. Jacobs, *supra* note 24, at 255.
51. *Ibid.*
52. *Id.*

sustainable use of natural resources need to take proper account of these limits so that suitable management measures can be put in place."[53]

Whilst this statement demonstrates that environmental limits have been recognised at government level, Holder and Lee point out that a) there still seems to be "some faith in technical fixes,"[54] b) environmental interrelationship remains unrecognised, c) "human brilliance" as a response to environmental degradation is not sufficiently scrutinised and d) identifying environmental limits will still remain within the ambit of political and "value judgment" and has the potential of becoming a platform for political abuse.

It seems that sustainable development has contributed to the recognition of certain environmental limits in the UK, however, the implementation of this idea is rather weak. One may be lead to believe that the government tries to be strategically clever by touching upon environmental issues but not engaging in managing the root of the problem. An example for the inadequate implementation of environmental limits within the concept of sustainable development in the UK can be found in the indicators that are used to determine "overall progress."[55] Dobson explains that in the UK economic development is measured by GDP and GDP per capita, while, for instance, one measure for effective environmental protection is "rivers of good or fair quality."[56] Regarding these two objectives as competitive, he holds that their "versions of what 'improvement' means"[57] are also incompatible. He illustrates his argument by saying that since GDP measures "*every* activity carried out in an economy,"[58] an activity such as the "clearing up [of] environmental damage once it has occurred" will also be included. Thus, situations may arise where

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53. Operational propositions include the analysis of existing and future research on environmental limits and the identification of areas where environmental limits are not understood, appreciated and observed.
54. *Ibid*.
55. *Ibid,* 248.
56. Dobson, *Citizenship and the Environment*, (2003) at 150
57. *Ibid*.
58. *Id*.

one sustainable development indicator is affected negatively,[59] while another indicator is affected positively.[60]

If the UK embraced a stronger version of the concept of environmental limits, then the overall development would be measured by the extent to which environmental limits are observed within economic development and not by simply trading off economic growth and environmental protection. It seems that wherever the government has the possibility to give environmental protection under sustainable development real teeth, it chooses to engage with the issue merely at the surface. Given the imbalance of power between environmental protection and economic development, the overall achievement of sustainable development will tend to be indicated as positive. Thus, it may be questionable to what extent the government's decision not to strengthen the principle of environmental limits is a deliberative act. In doing so, the government's aim seems to be the maintenance of the unbalanced power relations between environmental protection and economic development within sustainable development, where the latter is clearly favoured. Again, the space for political value judgment within the concept of sustainable development becomes apparent.

As we learn from this section, much criticism exists condemning the stronger position of economic development over environmental protection. Although the imbalanced power relation has not miraculously disappeared through the application of sustainable development, it has been attempted and somewhat been contributed to balancing out the relationship between the two objectives. Art. 6 of the EC Treaty, for example, introduces the 'integration principle':

"*Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view promoting sustainable development*."[61]

Thus, environmental protection now permeates all sectors of law-making and is not a separated block of rules. This approach seems more effective, since arguably, environmental protection concerns all aspects and

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59. here: "the discharge of effluent into a river" (Id.)

60. here: "increased economic activity associated with cleaning up the mess" (Id.)

61. The Treaty Establishing the European Economic Community (EEC Treaty or Treaty of Rome) (298 U.N.T.S. 11) (1957).

sectors of life and is difficult to be treated as an isolated field, and, thus, requires to be treated in an integral way.

Nevertheless, the conflict between the different objectives seems to remain downplayed by the government, enabling economic development to gain disproportionate levels of strength and power within sustainable development, furthering the tensions between the two objectives and potentially widening the gap between the levels of achievement of the two objectives. Due to the indefinite and open nature of the concept, cunning political strategies and powerful economic interest groups, environmental protection has until now been on the weaker side of the gap. From this perspective, it really is questionable, whether sustainable development has actually contributed to environmental protection or merely acts as a curtain behind which powerful economic interests groups can hide and continue to pursue their goals whilst the public is lead to believe that overall development (*including* environmental protection) is being achieved.

b. *Strong Sustainability Vs Weak Sustainability And Human- Centered Anthropocentrism Vs Human- Instrumental Anthropocentrism*

As explained in the previous sections, definitional questions over sustainable development and preferential questions as to the elements of the concept are ultimately determined by political motivation. In order to understand what type of sustainable development conception is applied in certain cases, interpretive categorisation schemes of sustainable development have been established, many of them involving weak and strong versions of sustainability.

Dobson understands that the "first and most important faultline [between weak and strong versions of sustainability] is the *degree of environmental protection* it requires."[62]

Weak sustainability aims at protecting the environment when possible and at limiting economic activity only if environmental danger has been predetermined. Dobson holds that this type of sustainable development balances or trades off "the benefits of economic growth against those of environmental protection"[63] and that "no aspect or level of the environment is regarded as inviolable, at least until countervailing economic

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62. Dobson, *supra* note 42, at 31.
63. *Ibid.*

benefits have been assessed." Whilst this version of sustainability is mostly applied by economic interest groups and governments, Dobson explains that the strong version of sustainable development is popular amongst environmentalists and ecologists. The two sources of strong sustainability define the latter as (a) a concept where the "carrying capacity"[64] of the biosphere is understood, i.e. "the maximum population of a species which an ecosystem can support"[65] (ecological source) and (b) a concept where "carrying capacity" defines the limits of economic activity that can be done at "tolerable levels of environmental degradation" (economic source). The strong version promotes a far stricter version of sustainable development and aims at widening and strengthening the idea of environmental limits, which humans have to learn to live within.

Timothy O'Riordan depicts another version of sustainability in which the faultline is the degree to which the capital stock is maintained.[66] Carter holds that O'Riordan "distinguishes between levels of sustainability according to the way human and environmental resources are valued ranging […] along a continuum from technocentrism to ecocentrism."[67] He divides sustainability into four subcategories: very weak, weak, strong to very strong. Whilst very weak sustainability does not foresee any protection of natural capital as long as it can be replaced by human capital, the weak version recognises that some natural resources cannot be replaced and require protection. Strong sustainability extends this notion, applying a far more detailed and stronger definition of the natural resources, which ought to be protected and the manner in which they should be protected. The application of the precautionary principle in this category also suggests a more sceptical and preventive approach to resource depletion. Whilst this category is mostly supported by environmentalists, the final class separates the latter from deep greens and ecologists. It is characterised by a radical approach to capital stock maintenance and envisages "local, social, political and economic self-reliance and a redistribution of property rights through burden-sharing."[68]

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64. *Id*.
65. *Ibid,* 32.
66. *See*, O'Riordan, T., and Jaeger, J., *Politics of Climate Change*, (1996).
67. Carter, *The Politics of The Environment: Ideas, Activism, and Policy*, (2001), at 200.
68. *Ibid.*

From a more philosophical perspective, deep greens find that the underpinning fault in the concept of sustainable development lies in its anthropocentric approach: "the mistake of giving exclusive or arbitrarily preferential consideration to human interests as opposed to the interests of other beings."[69] A strong version of anthropocentrism is defined by deep greens as human- instrumentalist, and a weak version as human- centred. Whilst the former to some extent disregards the instrumental use of nature by humans, the latter is far more "neutral"[70] and sees the ultimate purpose of environmental protection in the well- being of human beings. Greens condemn the fact that current forms of sustainable development apply the human- centred approach and do not appreciate nature's intrinsic value. Even the very term 'protection or preservation of nature' carries a patronising notion, placing the human being higher than nature. Greens believe that rather than to rule over nature, humans should live in harmony with nature since they are merely a part of it. However, the fact that humans have the capability of harming nature is undeniable and by applying the human- centred approach we at least include ourselves in the process of environmental protection. This implies that we take on the responsibility to preserve the environment and can also hold ourselves accountable, if environmental damages occur.

All three categorisations presented in this section aim at classifying those who apply the concept of sustainable development according to their motivations. The latter can be the result of various types of interests, e.g. economic or moral persuasion. Whilst in all three typologies the weak versions of sustainability seem to be favoured by those with an economic and human- centred interest, supporters of the strong versions appear to recognise an intrinsic value in nature and regard environmental protection as pivotal for reasons other than the human- welfare or economic development. All three categorisations seem to suggest that ultimately the degree to which you support environmental protection under the umbrella of sustainable development is again a matter of political determination.

During my research, I encountered many categorisations and sub-divisions of the concept of sustainable development and different conceptualisations of it. However, as condemned by deep greens, there is no valid agreement specifying which political motivation should take priority.

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69. Dobson, *supra* note 42, at 51.
70. *Ibid.*

It appears to me that a vast amount of academic literature exists, condemning and blaming the strong political nature of the overall concept, which renders sustainable development susceptible to the potential of oppressing the objective of environmental protection[71] and placing higher importance on economic development.

What then are the options to evade this dilemma? Should there be a universally valid definition of sustainable development, determining what exactly the concept endorses and which elements to give priority to? Would this be legitimate? If so, who would have the authority to make this definition? I will consider these issues in the following section.

c. *North Vs South*

It seems that the only adequate solution to the definitional problems discussed above would be a more specific and detailed definition of sustainable development, so that the concept's content is less ambiguous, more operational and beneficial for environmental protection. How legitimate and effective would a precise, legally binding and universally valid definition of sustainable development be? This type of sustainable development would enable and require an equal application of a specific set of rules by every state and would oppose the traditionally equitable application of sustainable development in international law.[72] Related considerations would be the questions of who would make these rules, which of the three major elements would take priority and what would be the grounds of the decision? It could potentially lead to the imposition of ideas and strategies of one interest group on all others. For instance, "defining and implementing the broad conception of sustainable development in local government in Britain are almost entirely drawn from the environmental field."[73]This could lead to what Dobson calls "environmental imperialism,"[74] i.e. prioritisation of environmental protection over the other elements.

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71. Deep greens believe that the objective has *already* been oppressed.
72. *See,* Rio Declaration on Environment and Development , Principle 7; Brutland at p. 43
73. Dobson, *supra* note 42, at 37.
74. *Ibid.*

Furthermore, at the international level the question of which element should be put first, will inevitably lead to a clash of interests, mainly between economically developed countries ('North') and economically less developed countries ('South'). Whilst the former take greater interest in environmental protection, the latter are often more concerned with poverty reduction:

"*The difference between the Southern and Northern interpretations of sustainable development has been a major source of conflict in the international debate, […] Third World countries accuse the industrialized nations of reinterpreting the concept as simply an 'environment', not a 'development' one […]*"[75]

It seems that international regulations are based on standards of the North and the South is merely left to apply the rules. Whilst the North presses the South to adapt to environmental standards, little is done on their own parts in terms of resource redistribution and slowing down economic growth. It is arguable that a universally valid definition and application of sustainable development would yet be another disguised form of imperialism exercised by the global North over the South. Moreover, the basic rationale within development is for less developed countries to measure themselves against the standard of more developed countries and to try and achieve their levels of standard. If the South develops in the way that the North has, degradation will worsen to a degree, which will exceed the environmental capacity. Thus, in terms of both, environmental protection and poverty reduction, it seems more plausible if Northern countries gave "high priority to changing their lifestyle in their own societies in order to become real models for sustainable development."[76] Furthermore, an equitable approach to sustainable development enables a more culture and situation specific application of sustainable development. This does not only seem fairer and more appropriate for people from diverse cultures and societies, but also better for environmental protection, and it leaves at least some space for reconsidering and redefining the very meaning of 'development', its nature and aim.

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75. Dobson, *supra* note 42, at 33

76. "Bridging the Gap", *The Danube*, *in* Debating the Earth: The Environmental Politics Reader, (Dryzek and Schlosberg eds., 1998) at 275.

III.] CONCLUSION - NORMATIVE VS TECHNICAL

This essay has provided a study of the difficulties surrounding the concept of sustainable development regarding its vague and broad definition and its inclusive approach. Due to the nature of sustainable development, the meaning of the concept seems to remain in the eye of the beholder. Ultimately, the interpretation of the concept is determined by political motivation and power. It has been claimed that this causes the objective of environmental protection to be undermined and other elements to gain more strength within the concept. Furthermore, the inclusion of so many elements under the umbrella of sustainable development leads to confusion and often appears to weaken the progress of the environmental protection, too.

Whilst I agree with most aspects of the criticisms voiced by environmentalists and deep greens and find that it is important to address them, I submit that, the positive aspects of sustainable development and the open nature of the concept seem to be understated by them. In addition to the advantages mentioned above, Dobson portrays the concept as a "valuable weapon"[77] against the government who can be held to account when environmental damage occurs. Furthermore, the fact that "real and widespread"[78] agreements have been made nationally and internationally[79] is not accredited sufficiently. At the very least, sustainable development should be acknowledged for giving more weight to environmental protection and spreading awareness among states and their citizens. The latter is enforced by involving the public in processes concerning sustainable development through mechanisms of public participation.

Finally, I submit, that criticism of the yet weak position of environmental protection within the concept is highly relevant and important. However, focussing too much on finding the exact definition of

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77. Dryzek, *supra* note 9, at 270.
78. *Ibid.*
79. Note, however, that the nature of international laws has a limiting impact on the effectiveness of binding international laws on sustainable development issues: e.g. compliance is voluntary, thus a state can chose not to ratify or to opt out of an agreement; standing of international laws has traditionally been limited to states, i.e. individuals, who might be strongly affected, as mentioned above, are not regarded as legal persons and can not bring actions under international laws.

the concept would (a) not be justifiable, as a one – size – fits – all type of sustainable development would not be equitable, and (b) would not necessarily contribute to environmental protection, as the requirements for effective environmental protection vary from one place to another.

On the other hand, the openness of the concept at the normative level allows the objective of economic development to gain disproportionate levels of power at the operational level. Defining the concept in detail would invade the normative sphere, which is inherently value- based. Thus, the political abuse of and the tensed power- relations within the concept would presumably merely shift from the operational to the normative sphere. It appears to me that it is better to maintain the two spheres separated. I submit, that rather than attempting to overcome this problem by establishing an exact definition of sustainable development, mechanisms should be created which prevent political abuse and strengthen the objective of environmental protection at the operational level.

USE AND CONTROL OF GROUNDWATER: TOWARDS A NEW FRAMEWORK

Philippe Cullet[*]

ABSTRACT

Groundwater has become the main source of water for all the main uses of water, including in particular domestic use and agriculture. This tremendous increase in the use of groundwater has had significant impacts on availability of and access to water. The current regulatory regime is in large part still based on principles inherited from the colonial period. These are both dated and inappropriate. There have been attempts to reform the existing framework since the early 1970s. Yet, current reforms are inappropriate. Firstly, they fail to sever the link between land ownership and access to groundwater, a precondition for ensuring that groundwater law contributes, for instance, to the realisation of the fundamental human right to water. Further, they add a layer of governmental control to a largely privately regulated framework but fail to recognise the constitutionally sanctioned rights of the panchayats in controlling local sources of water.

This paper firstly seeks to analyse the traditional rules of access and control over groundwater and moves over to examine the ongoing legal reforms concerning groundwater management. The limitations of the 'old' colonial framework and the proposed reforms call for new proposals for the reform of groundwater law. This has been made all the more necessary in the context of disputes like the Plachimada case where the two decisions already taken in this case gave two completely different readings of the rules applying to groundwater.[1] *While the Supreme Court may eventually lay new framework in its future decision on the*

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1. *Perumatty Grama Panchayat v. State of Kerala*, 2004 (1) KLT 731, available at www.ielrc.org/content/e0415.pdf (last visited on October 13, 2010) and *Hindustan Coca-Cola Beverages v. Perumatty Grama Panchayat*, 2005(2) KLT 554, available at www.ielrc.org/content/e0515.pdf (last visited on October 13, 2010).

case, this may not alleviate the need for a broad-based rethinking of groundwater rules, beyond the specific dispute arising in the Coca Cola case.

I.] TRADITIONAL RULES OF ACCESS TO AND CONTROL OVER GROUNDWATER

Groundwater has usually been treated separately from surface water.[2] Historically, this can be ascribed in part to a lack of understanding of the connections between surface and groundwater and of the relationship between groundwater abstraction in different places. This also reflected the unavailability of pumping devices allowing large-scale groundwater withdrawals to the extent of significantly affecting the water table level.

These factors contributed to the development of separate legal principles for control and use of groundwater. Since groundwater is directly linked to the land above, a link was established between land ownership and control, if not outright ownership, of the water found underneath the plot. While no specific groundwater legislation arose until the past decade, basic principles of access and control can be in part derived from the Easements Act, 1882. Under these principles, landowners have easementary rights to collect and dispose of all water found under their land.[3] There is thus an indissociable link between land ownership and control over groundwater. This implies that groundwater is mostly controlled by individuals or legal entities that own or occupy land. Where the common law principle is strictly applied, landowners are not restricted in the amount of percolating water they can appropriate.[4] It can, however, be argued today that, even under common law principles, owners cannot exploit groundwater beyond the replenishable level.[5]

The link between groundwater and land ownership is important for different reasons. Firstly, groundwater has been and is an increasingly

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2. This also holds in other parts of the world. For Southern Africa, eg. L.A. Swatuk, *The New Water Architecture of SADC, in The Age of Commodity – Water Privatization in Southern Africa*, (D.A. McDonald and G. Ruiters eds., 2005) at 43.
3. Halsbury's Laws of India, (2000) at 447.
4. M. Moench, *Approaches to Groundwater Management: To Control or Enable?*, 29/39 EPW A135 (1994).
5. Ground Water Management and Ownership – Report of the Expert Group (Government of India, Planning Commission, 2007) at 23.

important source of drinking water. This is due both to the existence of increasingly powerful pumping devices as well as to an increasing bias against the use of surface water as a source of drinking water to ensure that it is of better quality. Secondly, groundwater has been an increasingly important resource used by landowners in different types of economic activities. In fact, groundwater has now become in certain regions as important or even more important than land itself.[6] Besides agriculture, large-scale water abstraction is also carried out by certain industries, as in the case of water or soft drink bottling plants.

Where control over groundwater is linked to land rights, there are neither any incentives for individual landowners to sustainably use the resource nor any way to implement policies that take into account the welfare of a broader community and the environment. In what is for all practical purposes an unregulated system, there is, for instance, no authority that can determine how many wells, handpumps and other tubewells can be sunk in a given area. Some form of regulation that takes into account the broader aspects of groundwater use is thus necessary. Regulation is also required because the increasing use of groundwater controlled by private individuals may shift away control over water from communities. Thus, in the case of tank irrigation in Tamil Nadu that are often largely community managed, increased use of groundwater and the lesser importance attached to tanks seems to have shifted the determinants of water access away from communities into the hands of individuals.[7]

The dramatic increase in groundwater use and importance of groundwater as a source of water have led to significant debates but relatively little by way of concrete policy decisions. To date, the most significant initiatives at the union level have been the drafting of a model bill for adoption by the states and the setting up of the Central Groundwater Authority mandated to regulate and control the use of groundwater.[8] Its mandate includes the notification of 'over-exploited' and 'critical' areas and the regulation of groundwater withdrawal in such areas but it does not have a broad mandate to regulate groundwater in general.

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6. S. Janakarajan and M. Moench, *Are Wells a Potential Threat to Farmers' Wellbeing? The Case of Deteriorating Groundwater Irrigation in Tamilnadu* (MIDS, Working Paper No. 174, 2002).
7. *Ibid*, 2.
8. Ministry of Environment and Forests, Gazette Notifications SO38 and SO1024 of 14 January 1997 and 6 November 2000.

The Authority is not credited with having had much impact in its decade of existence.[9]

This results in relatively little since, unlike irrigation water where the introduction of formal legislation started more than a century ago, groundwater was largely governed by principles that assumed self-regulation. The dramatic changes that have taken place in the past few decades and turned groundwater into the major source of water are not reflected in the existing legal framework, including in the states that have adopted the model bill as a prototype for their legislation, since this is not a comprehensive regulatory response. This can be partly ascribed to the fact that falling water tables can be 'fixed' for some time by simply digging further down. This has provided an opportunity for governments to avoid facing some difficult political choices. In fact, in a number of states, the answer to falling water tables has been not to address the issue itself. State governments have thus often chosen to increase power subsidies to make extraction of ever deeper layers of groundwater possible rather than tackle the underlying cause of depletion. The limits of an approach that not only refuses to control access to groundwater but seeks to encourage it with specific subsidies have been clearly understood. The unavoidability of a different response has dawned on most states but the fact that it is a politically extremely sensitive issue implies that some states may still further delay necessary measures by a number of years.

II.] ONGOING LAW REFORMS CONCERNING GROUNDWATER

Groundwater regulation is one of the areas that are most in need of reforms.[10] This is due to the fact that groundwater is now the main source of water for most water users and that the current outdated framework can do little more than adjudicate claims that may arise between two landowners over their respective use of groundwater under their plot and in its vicinity. The challenge that groundwater poses has been recognized for quite some time, as witnessed by the fact that the union government already

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9. Eg. T. Shah, *Groundwater Management and Ownership: Rejoinder*, 48/17 EPW 116 (2008).
10. Eg. S. Koonan, *Legal Regime Governing Groundwater, in Water Law for the Twenty-First Century: National and International Aspects of Water Law Reform in India*, (P. Cullet, A. Gowlland-Gualtieri, R. Madhav and U. Ramanathan eds., 2010) at 182.

put out a model bill for adoption by the states in 1970. This relatively early date of adoption of the model bill is reflected in its approach to groundwater regulation. Indeed, in the early 1970s, there was comparatively little discussion of the need for control by panchayats over natural resources or water and environmental concerns had only just made an appearance on the agenda of policy makers. It is thus not surprising to find that the 1970 model bill reflects the concerns and perceptions of that period. What is more surprising is that, despite several revisions, the model bill (re)proposed in 2005 is still based in the same premises.

Groundwater law reforms are noteworthy for several reasons. Firstly, the proposed changes conform to a model that is neither directly in line with ongoing policy reforms in the water sector seeking to turn water into an economic good nor influenced by the 73rd/74th constitutional amendments, nor influenced by human rights and environment principles. Secondly, they perpetuate the sectoral treatment of surface and groundwater, perpetuate a system that links access to groundwater and land and fail to acknowledge that groundwater is the primary source of drinking water and thus primordial in the realization of the human right to water. Thirdly, ongoing reforms are based on suggestions for reforms that date back several decades. This implies that they are not directly influenced by new notions such as the idea that water should be seen as an economic good. This may be positive because it constitutes at least some sort of an alternative to the current policy framework for water law reforms,[11] but at the same time is not a solution that can be recommended because of its lack of social and environmental perspective and because it perpetuates a sectoral model of water law development.

a. *The proposed legal changes*

A model bill for groundwater regulation was first proposed by the union government for adoption by the states in 1970. It has been revised several times but the basic framework of the latest 2005 version retains the basic framework of the original bill. Recent legislative activity by states indicates that they are generally ready to follow the framework provided by the model bill. This is the case of states adopting general groundwater

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11. On water law reforms, See generally P. Cullet, *Water Law, Poverty and Development – Water Sector Reforms in India*, (2009, 1st ed.).

legislation like Kerala,[12] or states focusing on its drinking water aspects like Karnataka, Madhya Pradesh and Maharashtra.[13]

The basic scheme of the model bill is to provide for the establishment of a groundwater authority under the direct control of the government. The authority is given the right to notify areas where it is deemed necessary to regulate the use of groundwater. The final decision is taken by the respective state government.[14] There is no specific provision for public participation in this scheme. In any notified area, every user of groundwater must apply for a permit from the authority unless the user only proposes to use a handpump or a well from which water is drawn manually.[15] Wells need to be registered even in non-notified areas.[16] Decisions of the authority in granting or denying permits are based on a number of factors which include technical factors such as the availability of groundwater, the quantity and quality of water to be drawn and the spacing between groundwater structures. The authority is also mandated to take into account the purpose for which groundwater is to be drawn but the model bill does not prioritize domestic use of water over other uses.[17] Basic drinking water needs are indirectly considered since, even in notified areas, hand-operated devices do not require the obtention of a permit.[18]

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12. Kerala Ground Water (Control and Regulation) Act 2002, available at www.ielrc.org/content/e0208.pdf (last visited on October 13, 2010).
13. Karnataka Ground Water (Regulation for Protection of Sources of Drinking Water) Act, 1999, available at ww.ielrc.org/content/e9905.pdf (last visited on October 13, 2010); Madhya Pradesh Peya Jal Parirakshan Adhiniyam, 1986, available at www.ielrc.org/content/e8603.pdf (last visited on 13th October 2010) and Maharashtra Ground Water Regulation (Drinking Water Purposes) Act, 1993, available at www.ielrc.org/content/e9301.pdf (last visited on October 13, 2010). On the Maharashtra Act, S Phansalkar and V Kher, *A Decade of the Maharashtra Groundwater Legislation*, 2/1 Law Environment & Development Journal 67 (2006), available at www.lead-journal.org/content/06067.pdf (last visited on 13th October 2010).
14. Clause 5, of Model Bill to Regulate and Control the Development and Management of Ground Water 2005..
15. *Ibid*, Clause. 6.
16. *Ibid*, Clause. 8.
17. *Ibid*, Clause . 6(5)(a) only provides that the purpose has to be taken into account while Section 6(5)(h) which is the only sub-section referring to drinking water only considers it as an indirect factor.
18. *Ibid*, Clause. 6(1).

The model bill provides for the grandfathering of existing uses by only requiring the registration of such uses.[19] This implies that in situations where there is already existing water scarcity, an act modelled after these provisions will not provide an effective basis for controlling existing overuse of groundwater and will, at most, provide a basis for ensuring that future use is more sustainable.

Overall, the model bill extends the control that the state has over the use of groundwater by imposing the registration of groundwater infrastructure and providing a basis for introducing permits for groundwater extraction in regions where groundwater is over-exploited. It is the brainchild of an era that promoted governmental intervention without necessarily thinking through all the checks and balances that needed to be introduced alongside. As a result, the model bill is not adapted to the current challenges that need to be addressed.[20] It fails to include specific prioritization of uses, does not specifically address the question of domestic use, does not differentiate between small and big users, commercial and non-commercial uses and does not take into account the fact that non-landowners/occupiers are by and large excluded from the existing and proposed system which focuses on the rights of use of landowners. It is thus surprising that states are still drafting acts based on this outdated model. What is required is legislation that recognizes that water is a unitary resource, that drinking water is the first priority as well as a human right and that panchayati raj institutions must have control over and use of groundwater.

b. *What are the reforms being implemented by states?*

A number of states have either adopted groundwater legislation in the past decade or are in the process of developing it. While most states are yet to adopt legislation, the need for one seems to be generally acknowledged. However, in an interesting twist, a state like Punjab that has 85 percent of its land under cultivation is not contemplating the adoption of groundwater legislation because of the impacts it would have on

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19. *Ibid*, Clause. 7.
20. For additional comments, Ground Water Management and Ownership – Report of the Expert Group (Government of India, Planning Commission, 2007).

farmers.[21] Instead, Punjab is proposing to give incentives for crop diversification, to invest in artificial groundwater recharge, to meter electricity supply in critical areas and to promote micro-irrigation.

The states that have adopted legislation that specifically focuses on groundwater include Goa, Himachal Pradesh, Kerala, Tamil Nadu and West Bengal.[22] They differ in their coverage since some apply only to notified areas while other apply to all groundwater. As noted above, Karnataka, Madhya Pradesh and Maharashtra have adopted limited groundwater legislation focusing on drinking water.[23] The only state that has consciously put groundwater in a broader framework is Andhra Pradesh where the groundwater legislation directly links surface and ground water in a general context of environmental conservation.[24] Apart from a conceptually broader framework for groundwater regulation and specific consideration of drinking water issues, the Andhra legislation addresses groundwater in a similar manner to other groundwater Acts.

The main institutional innovation proposed in the groundwater acts and the Andhra legislation is the setting up of a new authority or cell made of government civil servants and members nominated by the government because of their expertise. The balance between civil servants and other members varies. In Goa, the act simply authorizes the government to nominate members without specifying their origin.[25] In West Bengal, the majority are civil servants. In Kerala only four of the thirteen members of the Authority are civil servants while the rest is made of a combination of people with different expertise.[26]

The authority set up under the act is then tasked with different functions, such as notifying areas of special concern and granting permits to

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21. *Ibid*, 29.
22. Puducherry and Lakshadweep have also adopted groundwater regulation instruments, respectively in 2002 and 2001.
23. Maharashtra is in the process of adopting a broader groundwater legislation. See Maharashtra Groundwater (Development and Management) Bill, 2009, available at www.ielrc.org/content/e0917.pdf (last visited on October 13, 2010).
24. Andhra Pradesh Water, Land and Trees Act, 2002, available at www.ielrc.org/content/e0202.pdf (last visited on October 13, 2010).
25. Section 3(2), of Goa Ground Water Regulation Act, 2002, available at www.ielrc.org/content/e0201.pdf (last visited on October 13, 2010).
26. Section 3(3), of Kerala Ground Water (Control and Regulation) Act, 2002.

use groundwater in notified areas.[27] Among the acts that specifically focus on groundwater, the West Bengal legislation is the only one that gives the Authority a broader mandate that includes the development of a policy to conserve groundwater and organizing people's participation and involvement in the planning and use of groundwater.[28]

Following on the steps of the model bill, most acts fail to clearly give drinking water priority of use even though most acts devote specific attention to the issue of drinking water.[29] The Himachal Pradesh legislation stands out insofar as it imposes on the Authority to give first priority to drinking water.[30] Additionally, some instruments specifically indicate that the use of groundwater as public drinking water source is not affected by any control measures.[31]

An important aspect of most of these acts is to avoid altogether the thorniest question, which is the legal status of groundwater itself. Most acts avoid direct statements on this issue but the very fact of promoting the setting up of institutions controlled by the government that can regulate groundwater use in indirect and direct ways reflect a conception of water that sees it as being under the control of the government. The Himachal Pradesh legislation is rather forthcoming in this regard since it specifies that users of groundwater in notified areas must pay a royalty to the government for its extraction.[32] Additionally, the government is not even bound to use this royalty for groundwater-related activities, thus reflecting an understanding that groundwater is a resource controlled by the

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27. Eg. Sections 5 & 7, of Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005, available at www.ielrc.org/content/e0507.pdf (last visited on October 13, 2010).
28. Section 6(2), ofWest Bengal Ground Water Resources (Management, Control and Regulation) Act, 2005, available at www.ielrc.org/content/e0502.pdf (last visited on October 13, 2010).
29. Eg. Section 23, of Goa Ground Water Regulation Act, 2002.
30. Section 7(3), of Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005,.
31. Section 9, of Goa Ground Water Regulation Act, 2002. Also Clause 1(4), of Karnataka Groundwater (Regulation and Control of Development and Management) Bill, 2006, available at www.ielrc.org/content/e0623.pdf (last visited on October 13, 2010).
32. Section 12(1), of Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005.

government.[33] This can be understood as an extension of the full control given by several irrigation acts adopted in the twentieth century to the government over surface water. It is, however, surprising for at least two reasons. Firstly, there has been only very limited debate on the status of groundwater and such a major change would warrant in-depth consideration. Secondly, if any change is warranted it would be to recognise groundwater as part of the public trust. Indeed, in the context of surface water, the Supreme Court has recognised that assertions of government power over water was not warranted anymore and declared that it was part of a public trust. In fact, the Supreme Court has already recognised at least once that groundwater is a public trust.[34]

Besides strengthening the control that the government claims over groundwater, the various acts adopt a non-confrontational strategy in refusing to tackle existing overuse of groundwater. Thus, in the main, acts provide for the grandfathering of most existing uses. This amounts to refusing to tackle the real problem affecting groundwater. Indeed, as long as it is landowners that have most control over groundwater, there will be no scope for groundwater regulation that is socially equitable and environmentally sustainable. There is no incentive in the common law rules or in the acts that are being adopted for individual landowners to use the water responsibly and equitably. There is also no mechanism to ensure that groundwater is shared with non-landowners. Further, without a broader perspective, no single water user has any reason to recognize environmental needs ensuring that all ecosystem functions are met in the long term.

The limits of the old common law regime and new legislative efforts are well illustrated in the context of the dispute between the Perumatty Grama Panchayat in Kerala and the Coca Cola Company.[35] The controversy erupted after the panchayat that first granted the exploitation licence decided not to renew it because of the lowering of the water table in neighbouring properties, as well as decreasing water quality to the extent that the local government primary health centre had concluded that the water was not potable.[36] The issue was brought to the courts and has been

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33. *Ibid*, Sec. 12(2).
34. *State of West Bengal v. Kesoram Industries Ltd*, (2004) 10 SCC 201.
35. Koonan, *supra* note 11 at 159.
36. C.R. Bijoy, *Kerala's Plachimada Struggle – A Narrative on Water and Governance Rights*, 42 EPW 4332 (2006).

in the Supreme Court for some time. The two decisions given by judges in Kerala gave two opposed views of groundwater regulation. On the one hand, the first judge found that even without groundwater regulation, the existing legal position was that groundwater is a public trust and that the state has a duty to protect it against excessive exploitation.[37] Additionally the judge made the link between the public trust and the right to life.[38] It was thus recognized that a system which leaves groundwater exploitation to the discretion of landowners can result in negative environmental consequences. The next decision took a completely different perspective and asserted the primacy of landowners' control over groundwater.[39] These two contradictory decisions illustrate the need for a framework that effectively ensures the sustainability of use of groundwater and the prioritization of drinking water over all other uses. Reliance on old common law principles is only able to justify individualized control but cannot in any way provide a broader framework of analysis. The inapplicability of the groundwater legislation to this dispute was noted by the judges. However, what is apparent is not the fact that the new legislation is not applicable but the fact that it would not have provided a framework for a more socially equitable and environmentally sustainable decision. The application of the act to future similar disputes may clarify matters in terms of institutional decision-making but it would likely lead to results fairly similar to the decision of the second judge. What is needed is a radically new perspective, something that the first judge perceptively understood.

III.] NEED FOR A NEW FRAMEWORK

Ongoing reforms of groundwater regulation fail to bring in a regulatory framework that is either adapted to the needs of the twenty-first century or compliant with existing constitutional principles. Firstly, existing groundwater reforms fail to implement basic constitutional principles related to water that apply without doubt to groundwater. This is the case of the fundamental human right to water and the decentralisation

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37. *Perumatty Grama Panchayat v. State of Kerala,* 2004(1) KLT 731.
38. *Ibid.*
39. *Hindustan Coca-Cola Beverages v. Perumatty Grama Panchayat*, 2005(2) KLT 554 at ¶ 43.

amendments (73rd/74th amendments). With regard to the fundamental right to water, its application to groundwater is essential because groundwater provides most of our drinking water. Yet, groundwater legislation has only exceptionally focused on drinking water and never from a fundamental right perspective. With regard to the 73rd Amendment that gives panchayats control water management at the local level and minor irrigation, ongoing reforms conceived before 1992 are simply not in tune with the new constitutional requirements.

Secondly, existing reforms fail to address the core issue of the legal status of groundwater. The failure to abolish common law rules giving landowners overwhelming control over groundwater – as was for instance undertaken in post-apartheid South Africa – does not provide scope for bringing in a legal regime that is socially equitable and environmentally sustainable. The need for a drastic change in legal status is, for instance, illustrated by the fact that the first judge in the Plachimada decision felt that he could not take a just decision without asserting the extension of the principle of public trust to groundwater.

In addition to their failure to implement constitutional provisions, ongoing reforms also fail to take into account important objectives. Groundwater legislation is to date conceived largely as a natural resource legislation that fails to integrate the key social dimension of groundwater. Similarly, groundwater legislation fails to integrate existing environmental law principles, such as the precautionary principle. While water and environment are partly separate branches of law, they are also intrinsically linked as reflected in the fact that the Water Act, 1974 was conceived as an environmental legislation. The dismissal of environmental principles from the rest of water law is thus unwelcome and inappropriate.

The stringent limitations of current groundwater regulation reforms calls for a new conceptual paradigm and a new set of reforms. This goes against the advice of the Expert Group set up by the Planning Commission that 'no change in [the] basic legal regime relating to groundwater seems necessary',[40] but is called for by the limitations highlighted above. The new set of reforms needs to be based on the basic principles of the national legal framework as it exists today rather than what was prevalent in 1970. Two of the important novel aspects are the explicit recognition of the fundamental

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40. Ground Water Management and Ownership – Report of the Expert Group (Government of India, Planning Commission, 2007) at 41.

human right to water and the decentralisation amendments. Integrating both these elements requires a complete rethinking of the basic structure of groundwater legislation. In other words, an entirely new set of reforms is needed to ensure the implementation of these basic principles. Such reforms must, for instance, ensure that delinking land and water rights is undertaken in the framework of the human right to water that requires restricting or eliminating individual entitlements to water.

In addition, further reforms must benefit from advances in the scientific understanding of the water sector. This should lead to the development of laws that do not make artificial divisions between surface and groundwater for instance. This is problematic because the disconnect does not exist in practice and leads today to absurd results because the basic principles governing surface water and groundwater are different.

Finally, the reforms must be based on recent legal developments within water law and in related areas. This includes the need to extend the principle of public trust, which has been repeatedly confirmed by the Supreme Court for more than a decade, to groundwater and the need to integrate the precautionary principle, a basic principle of environmental law that is directly relevant in the case of groundwater.

All these measures may be adopted at the state level in keeping with the constitutional mandate. There is, however, also a need for a legislation setting out the basic principles of water law at the national level. This may provide the backbone for groundwater regulation at the state level that is more compliant with the constitutional framework than is the case today.

INDIA'S GENETIC MONSTERS

Swati Singh and Upasana Rajaram[*]

ABSTRACT

Twelve years ago the American seed-giant Monsanto introduced a genetically modified variety of cotton seed into the Indian agricultural system resulting in large scale crop failure, massive environmental degradation and innumerable farmer suicides. Consequently the Indian legal and economic system awoke to the fact that it was not entirely prepared to embrace what the world was hailing as a panacea to all problems of food scarcity- Genetically Modified Organisms (or GMOs). It has been over a decade and today Monsanto is fast moving from its controversial Bt-cotton cash crops to futuristic GM brinjal food crops. India today, has a three tier structure in place to check and control the entry of GMO imports into the country, both for scientific and commercial purposes, which includes the Department of Biotechnology and the Ministry of Environment and Forests. This is considered essential because GM crops, with their altered gene codes, have potential impacts not only on food security but also on the environment in the form of genetic pollution, increased pest resistance coupled with fatal effects on beneficial biological indicators like birds as well as the livestock and humans which feed on these crops. In short, they pose a threat to the very balance of the ecosystem and biodiversity. Given these fears, what is more worrisome is that India is still not adequately equipped to deal with a second Monsanto. The Departments' directives were disregarded then and can be now as well. This apprehension is strengthened by the fact that despite flouting several of the prevailing environmental laws in the country (the Environment Protection Act, 1986, being one of them), Monsanto has not been made answerable to the Indian government till date. The Convention on Biological Diversity gave us the "Cartagena Protocol on Biosafety", which came into

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force on September 11, 2003, to which India is a signatory. This Protocol includes the precautionary principle which gives its signatories the right to have domestic systems in place to prohibit the import of GMOs from other nations, even on a mere apprehension of adverse environmental or health effects. To this extent the Protocol provides an effective safeguard. However, the problem arises when this is juxtaposed with the World Trade Organisation (WTO) standards which are in direct conflict with this principle because under them scientific certainty is essential for such bans on trade. This conflict reduces the environment of developing nations such as India to experimental labs. It is in the above framework that the authors intend to present this paper which would provide an insight into GMOs and their effect on the environment. In the process, the authors seek to outline the legal mechanisms present in India to deal with GMOs, and bring out the lacunae in such laws. A third dimension to the study would be the domestic laws vis-à-vis the Cartagena-WTO conflict, thereby dwelling upon the underlying conflict of development, elimination of food scarcity on one hand and the preservation of health and environment on the other.

I.] INTRODUCTION

Since the 1970s the focus of science has been genetic engineering[1] which essentially entails movement of specific genes with desirable traits from one organism to another, within or across species. The product of such gene alteration is a Genetically Modified Organism (GMO) or Living Modified Organism (LMO).

Ever since their introduction, a swirl of controversy has existed regarding the adverse impacts of such crops. The benefits of GM crops include reduction of pesticide use, greater food security[2] and enhanced nutritional quality of food.[3]There exist equally real risks, including risks to human health by the introduction of new food allergens, risks to the

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1. David. J. Schiner, *Genetically modified organisms and the Cartagena Protocol*, 12 Fordham Envtl. L.J. 379 (2000-2001).
2. *Ibid*, 385.
3. *Id*, 388.

environment through the flow of genes to non-target species as a result of cross pollination resulting in the creation of super weeds and super pests[4], disruption of agro ecosystems, as well as irreparable loss to the genetic makeup and diversity in species.[5]

II.] SCOPE OF THE CARTAGENA PROTOCOL

The Cartagena Protocol (hereinafter referred to as Protocol) was entered into force on September 11, 2003.[6] The Protocol was adopted under the auspices of the Convention on Biological Diversity (CBD).[7] The CBD was negotiated under the UNEP and entered into force on December 29, 1993[8].

Salient features of the Protocol include among other things, Advance Informed Agreement (AIA)[9] wherein the exporting country notifies[10] the importing nation of its intention to export GMOs.[11] On receipt of notice the importing nation will undertake risk assessment, carried out in a scientific manner through recognized techniques of risk assessment[12] and reach a decision within 270 days. The Protocol most significantly enshrines the precautionary principle. The principle is codified in Article 10.6[13] of the Protocol, enabling importing countries to base their

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4. Schiner, *supra* note 1, at 394.
5. A. A. Snow et al., *Genetically Engineered Organisms and the Environment: Current Status and Recommendations*, *Ecological Applications,* (Washington DC, April 2005) at 377.
6. Decision EM-I/3 of the Conference of the Parties to the Convention on Biological Diversity, September 11, 2003.
7. Convention on Biological Diversity, 1760 UNTS 79, June 5, 1992.
8. Schiner, *supra* note 1, 400.
9. The AIA is discussed in Articles 7 to 10 in addition to Article 12 of the Protocol.
10. The notification must contain a fairly exhaustive list of details of the GMOs including their intended use and other details of the GMO meant for export as found in Annex I.
11. Protocol, Art. 8.1.
12. Protocol, Art. 10(1), Art. 15 and Annex III.
13. Protocol, Art. 10.6:" Lack of scientific certainty due to insufficient relevant scientific information and knowledge regarding the extent of the potential adverse effects of a living modified organism on the conservation and sustainable use of biological diversity in the Party of import, taking also into account risks to human health, shall not prevent that Party from taking a decision, as appropriate, with regard to the

decision of banning an import due to the potential risk it poses to human health and environment even in the absence of sufficient scientific information about the kinds and extent of risk. The Protocol also prescribes labelling and identification procedures, in pursuance of which a distinction between GMOs intended for direct release into the environment and LFFPs is drawn. Only the former are required to be identified and documented.[14] The Protocol[15] places a duty on national governments to educate the public regarding genetic engineering and involve them in decision making. Provision is also made for socio-economic considerations in decision making.[16]

The Protocol fails to provide any kind of dispute settlement mechanism or liability for environmental damage resulting from GM technology. The Protocol doesn't clearly establish its relationship with pre-existing agreements[17] thereby creating a conflict in parties' obligations especially with respect to the WTO.

III.] WTO AGREEMENTS

Relevant WTO agreements that impact GMOs include provisions under General Agreement on Tariffs and Trade (GATT), Agreement on

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import of the living modified organism in question as referred to in paragraph 3 above, in order to avoid or minimize such potential adverse effects".

14. *See,* Barbara Eggers and Ruth Mackenzie, *The Cartagena Protocol on Biosafety,* 3 J. Int'l Econ. L.533 (2000).
15. Article 23.
16. Protocol, Art. 26- "1. The Parties, in reaching a decision on import under this Protocol or under its domestic measures implementing the Protocol, may take into account, consistent with their international obligations, socio-economic considerations arising from the impact of living modified organisms on the conservation and sustainable use of biological diversity, especially with regard to the value of biological diversity to indigenous and local communities.
    2. The Parties are encouraged to cooperate on research and information exchange on any socio-economic impacts of living modified organisms, especially on indigenous and local communities".
17. The savings clause present in the Preamble lays down that the Protocol will "not be interpreted as implying a change in the rights and obligations of a Party under any existing international agreements", while at the same time providing that the above clause is "not intended to subordinate this Protocol to other international agreements".

Technical Barriers to Trade (TBT) and Agreement on the Application of Sanitary and Phytosanitary Measures (SPS).

GATT covers all the international trade in goods. Article I, Article III and Article XI, ensure that nations do not take protectionist stands by striking at discrimination between like products.[18] However Article XX (b) provides an exception to protect human health while XX (g) talks of environmental protection and any measure taken under the said exceptions must be based on relevant scientific evidence.[19]

The TBT covers all technical regulations on imported goods including industrial and agricultural products.[20] Among the reasons for technical regulations, measures to protect human health and environmental protection are recognized. Such measures may be introduced after a risk assessment based on available scientific and technical information.[21]

SPS measures seek to protect human or plant life or health while promoting trade concerns. Articles 2.2 and 5.1 lay down that an SPS measure may be enforced only after appropriate risk assessment is undertaken Economic factors may be considered when determining the appropriate level of protection.[22] Articles 5.5, 5.6, 8 and Annex C urge parties to ensure that the measures are not more trade restrictive than necessary.[23] Article 5.7 embodies the precautionary principle. However these measures are only provisional and a member invoking such a measure must collect adequate additional information within reasonable time.[24]

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18. *See,* Olivette Rivera Torres, *The Biosafety Protocol and the WTO*, 26 B.C. Int'l& Comp L. Rev 289 (2003).
19. Laurent Ruessmann, *Putting the Precautionary Principle in its Place: Parameters for the Proper Application of a Precautionary Approach and the implications for Developing Countries of the Doha WTO Ministerial*, 17 Am. U. Int'l L. Rev. 915 (2001-2002).
20. Torres, *supra* note 18, 292.
21. TBT, Art. 2.2.
22. Protocol, Art. 5.3.
23. Eggers and Mackenzie, *supra* note 14, at 538.
24. *See*, Robert Howse and Petros C. Mavroidis, *Europe's Evolving Regulatory Stratergy for GMOs- The issue of Consistency with WTO law: Of Kine and Brine*, 24 Fordham Int'l L.J. 330 (2000-2001), for prescribed method of risk assessment, at 350.

IV.] CONFLICT BETWEEN WTO AND CARTAGENA

When compared as a whole the WTO measures place emphasis on free trade while the Protocol seeks affirmative action from parties to regulate trade in GMOs.[25]

a. *Precautionary Principle*

The precautionary principle lacks a clear definition and its scope varies in different international agreements. The WTO Agreements and WTO decisions prioritize free trade and contain the principle in its most limited form. In the recent WTO ruling against EU ban on import of GM crops from America,[26] the WTO reiterates its stand in the EU Hormones[27] case of using the principle in a narrow sense.[28] SPS permits only provisional precautionary measures. Even these measures have to be based on available information and must be reviewed in a reasonable period of time.[29] The Protocol allows indefinite restrictions in cases of uncertainty based on even non-scientific criteria.[30]

b. *International Standards*

The SPS encourages members to base their measures on international standards and recognizes three standard setting bodies- the Codex Alimentarius, International Office of Epizootics (IOE) and International Plant Protection Convention (IPPC) none of which relate

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25. Torres, *supra* note 18, at 294.
26. WT/DS291/R, WT/DS/292/R, WT/DS/293/R.
27. EC Measures Concerning Meat and Meat Products (Hormones), WT/DS26/AB/R, WT/DS48/AB/R.
28. Ian Sheldon, *Food Principles: Regulating Genetically Modified Organisms after the 2006 WTO Ruling*, 14 Brown J. World Aff. 128 (2008).
29. Patrick J. Valley, *Tension between the Cartagena Protocol and the WTO: The Significance of Recent WTO Developments in an Ongoing Debate*, 5 Chi. J. Int'l 373 (2004-2005).
30. Paul E Hagen and John Barlow Weiner, *The Cartagena Protocol on Biosafety: New Rules for International Trade in Living Modified Organisms*, 12 Geo. Int'l Envtl. L. Rev. 710 (1999-2000).

to biosafety measures.[31] This precludes the Protocol as an international standard setter with relation to GMOs under the SPS. In the absence of set standards, restrictions may be based solely on scientific justification again bringing into play the conflicting precautionary principles.

c. *Burden Of Proof*

In the Japanese Apples case,[32] it was ruled by the WTO that the burden to justify restriction was on the country of import. In contrast by specifying detailed notification requirements on the exporting country, burden under the Protocol is placed on the country of export.[33]

d. *Dispute Redressal*

Given the absence of a Dispute Redressal Agency under the Protocol, the WTO becomes forum to determine disputes with regard to GMO trade. The dominance of the WTO in settling disputes is further compounded by the fact that all WTO members are not signatories to the Protocol.

V.] THE BIOSAFETY REGIME IN INDIA WITH RESPECT TO GM PRODUCTS

India is a prominent member of the WTO as well as a signatory to the Protocol, thus a review of its domestic regulatory regime is worthwhile in light of the above discussion.

Relevant legislations include The Environment Protection Act, 1986 (EPA) in so far as it permits the Central Government to regulate and restrict handling of hazardous substances[34]. Under Sec. 25 of the EPA the

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31. Interestingly the TBT doesn't within its framework provide for any particular international organization as the recognized body of standard setting, in such a situation, the Protocol may be recognized as the standard setting body with respect to GMOs.
32. Japan – Measures Affecting the Importation of Apples, WT/DS245/R.
33. Patrick J. Valley , *supra* note 29, at 376.
34. EPA, 1986, § 2(e): "Hazardous substance" means any substance or preparation which, by reason of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plant, micro-organism, property or the environment. Section 6 authorizes the Central Government to make rules with respect

Rules for the Manufacture, Use/Import/Export and Storage of Hazardous Micro organisms/ Genetically Engineered Organisms or Cells, 1989 (Rules) were formulated which established a regulatory body to approve, prohibit and regulate GMOs even providing for dispute resolution and penalties in cases of non-compliance. In order to supplement these rules Guidelines were issued by the Department of Biotechnology (DBT). The guidelines relate to research activities including confined field trial.[35]

The Institutional Framework[36] divides of authority between the DBT under the Ministry of Science and Technology (MoST) and the Ministry of Environment and Forests (MoEF). A series of bodies are created under the two ministries with no particular hierarchy. Under the DBT there exists The Review Committee on Genetic Manipulation (RCGM) to ensure environmental safety in the areas of GMO research including field experiments[37] and the Monitoring and Evaluation Committee (MEC) that assists the RCGM with monitoring of research bodies.[38] The Genetic Engineering Approval Committee (GEAC) on the other hand is under the MoEF, it is the apex body to authorize the commercial use (including imports) of GMOs and release into the environment.[39] There are three other bodies under the de-centralized framework as the Institutional Biosafety Committee (IBSC)[40] the State and District Level Committees (SBCC and DLC)[41] the advisory Recombinant DNA Advisory Committee (RDNA).[42]

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to procedures and safeguards for and prohibitions and restrictions on the handling of hazardous substances. Section 8 which prohibits a person from handling hazardous substances except in accordance with the prescribed procedural safeguards.

35. *See,* Guidelines and Standard Operating Procedures (SOPs) for Confined Field Trials of Regulated, Genetically Engineered (GE) Plants - 2008, Guidelines for the Safety Assessment of Foods Derived from Genetically Engineered Plants - 2008, Protocols for Food and Feed Safety Assessment of GE crops - 2008.
36. A. Damodaran, *Re-Engineering Biosafety Regulations In India: Towards a Critique of Policy, Law and Prescriptions*, Law, Environment and Development Journal, (2005) at 3.
37. Damodaran, *supra* note 36, at 4.
38. Damodaran, *supra* note 36, at 5.
39. Aarti Gupta, *Ensuring 'Safe Use' of Biotechnology: Key Challenges*, Economic and Political Weekly, (July 6, 2002), at 2763.
40. Damodaran, *supra* note 36, at 4.
41. Damodaran, *supra* note 36, at 5.
42. Damodaran, *supra* note 36, at 4.

a. *The Lacunae In Status Quo*

The biosafety framework lacks any clear hierarchy between the various bodies and there exists no demarcation between various bodies.[43] The Monsanto-Mahyco fiasco highlighted the anomaly that existed between the understandings of field trials as mere experimental research by the DBT as opposed to deliberate release into the environment by the MoEF.[44] In addition despite provision for authorities such as the SBCC and the DLC at the de-centralized level these regulatory bodies have not been set up in most of the states and districts of the country.[45]

Similar confusion exists with legislations also; At least five existing legislations in force in India have a potential impact on the regulation of GM products in the country.[46] It is essential for the biosafety regulations to recognize them and work in tandem with them and reinforce each other.

Several international commitments are left unfulfilled. The regulatory bodies, primarily the RCGM and the GEAC, are constituted mostly by members of public sector institutions and government bureaucrats along with representation from the scientific disciplines[47] excluding public participation which is in severe violation of the CBD[48] as well as Cartagena.[49]

Our regulatory mechanism does not take into consideration the value of the biodiversity to the indigenous and local communities, thus

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43. Gupta, *supra* note 39, at 2764.
44. Gupta, *supra* note 39, at 2765.
45. Suman Sahai, *GMO Regulations in India and their Weakness,* available at http://www.genecampaign.org/Publication/Article/gmo-reg-india-weakness-p1=ID1.htm (last visited on March 5, 2010).
46. Namely- Prevention of Food Adulteration Act, 1954, the Seed Act, 1966, the Biosecurity Regulations, the National Biodiversity Act, 2002 and the Protection of Plant Varieties and Farmers' Rights Act, 2001.
47. Gupta, *supra* note 39, 2765.
48. CBD, Art. 14(1): "Each Contracting Party, as far as possible and as appropriate, shall: Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures".
49. Protocol, Art.23

choosing to ignore to assess the socio-economic impact of GMOs.[50] A poor liability regime is another concern. Two kinds of liabilities can arise- first, in the case of non-compliance with the legal requirements and second, damage caused to the environment as well as socio-economic and other forms of damages. Ours completely fails to address the latter.[51] There is no provision for any sort of compensation or confiscation. It is only under the EPA that there is provision for fine and imprisonment.[52]

Our international commitment to the Precautionary Principle has not been translated into a legally binding instrument in our domestic regulatory mechanism. In the existing mechanism there is no provision for labelling of GM products in order to segregate transgenic crops from the non-transgenic ones.[53]

Despite the shortcomings in existing laws, the government continues to remain apathetic as is reflected in the tabling before Parliament of the Biotechnology Regulatory Authority of India Bill (BRAI), 2009, which envisages a National Biotechnology Regulatory Authority (NBRA).The Bill emanates from the MoST and proposes to place the NBRA under the DBT, thus cutting away all the other spheres of interest which have an impact on the biotechnology scenario in India, namely

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50. Damodaran, *supra* note 36, at 11.
51. Sahai, *supra* note 45.
52. Section 15, The Environment Protection Act, 1986 - "Penalty for contravention of the provisions of the act and the rules, orders and directions - (1) Whoever fails to comply with or contravenes any of the provisions of this Act, or the rules made or orders or directions issued there under, shall, in respect of each such failure or contravention, be punishable with imprisonment for a term which may extend to five years with fine which may extend to one lakh rupees, or with both and in case the failure or contravention continues, with additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues after the conviction for the first such failure or contravention.(2) If the failure or contravention referred to in sub-section (1) continues beyond a period of one year after the date of conviction, the offender shall be punishable with imprisonment for a term which may extend to seven years".
53. Alexander G. Haslberger, *Monitoring and Labelling for Genetically Modified Products*, Science, (Washington, D.C., 21st January 2000), at 431.

social, agricultural and economic spheres.[54] It does not address any of the prevailing lacunae in the regulatory mechanism, be it the lack of public participation or the non-recognition of the Precautionary Principle. Sample, for instance, the highly controversial provision which penalizes a person who, without any scientific evidence or scientific record, 'misleads' the public about the safety of the organisms and products with imprisonment and fine. It overrides state authority and gives them only an advisory role when agriculture is in reality a state subject under the constitution.[55] This discourages state participation and further weakens the monitoring mechanism.

VI.] INDIAN REGULATION IN LIGHT OF THE CARTAGENA-WTO CONFLICT

Given the fact that India is a member of the WTO as well as a signatory to the Protocol, Indian laws reflect which side of the divide India is on. During negotiations to Cartagena, India was part of the like minded group[56] that was heavily in favour of intense regulation through the Protocol. A review of national laws hardly reflects this position. The mechanism of regulation omits critical principles set out under the Protocol such as a precautionary principle, socio-economic considerations and public participation indicating a tilt towards the WTO however even the WTO provides for considering economic and region specific considerations while enforcing measures.[57] Although the failure to incorporate provisions of the Protocol may suggest a tilt towards the WTO, the failure to enforce even WTO measures negates such an impression.

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54. P.V. Satheesh and Kanchi Kohli, *A Call to "Reject" the Biotechnology Regulatory Authority (BRAI) Bill, 2009 on Grounds of Ethical, Social and Political Concerns,* (February 15, 2010), available at http://curezone.com/blogs/fm.asp?i=1575316; http://current.com/items/92164511_new-gmo-bill-in-india-threatens-critics-with-prison.htm (last visited on March 5, 2010).
55. Mahim Pratap Singh, *Activists Voice Concern over Biotech Regulatory Authority Bill,* (Bhopal, February 18, 2010), available at http://beta.thehindu.com/news/national/article108821.ece (last visited on March 8, 2010).
56. Schiner, *supra* note 1, at 403.
57. SPS, Art.5. 3 and Art. 6.

VII.] CONCLUDING REMARKS AND SUGGESTIONS

Given the situations such as the moratorium on BtBrinjal imposed by the MoEF as result of public opposition it is essential for a country like India to evolve a holistic regulatory framework.[58] In order to do so it is imperative to implement our international commitments, including promoting public participation, adoption of the Precautionary Principle, incorporating socio-economic interests, labeling requirements and the like. One step in this direction would be a stand alone Gene Technology Legislation[59] inclusive of the abovementioned features as well as a strong liability clause (along the lines of the polluter pays principle), and dispute redressal mechanism. This need for a dispute redressal mechanism is fortified by instances such as the filing of a PIL in the Supreme Court in 2005 seeking a better biosafety test protocol for GMOs, which is yet to be disposed of.[60] Infrastructure is another sphere which needs attention. The absence of independent publicly- funded laboratories for conducting risk assessment tests results in these tests being conducted in the private laboratories of the biotech companies, as it happened in the case of BtBrinjal by Mahyco, which is a blatant conflict of interest.[61] Further it may be prudent to incorporate certain assessments, one being a performance assessment and the other a need assessment.[62] Given the nascent stage that gene technology is in, it may be wise to put in place a performance assessment mechanism post commercial release. Furthermore, before proceeding with the evaluation of any GM product, conducting a 'needs

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58. Matin Qaim, *Transgenic Crops and Developing Countries*, Economic and Political Weekly, (August11, 2001) at 3064-3066; Shiv Visvanathan and Chandrika Parmar, *A Biotechnology Story: Notes from India*, Economic and Political Weekly, (July 6, 2002), at 2719- 2722.
59. Suman Sahai, *The BT. Brinjal Case: Overhauling the Regulatory System must be the First Step*, available at http://www.genecampaign.org/Publication/Article/GMtech/the_Bt_brinjal-case-overhauling-the-regulatory-system-must-be-the-first-feb10=ID3.htm (last visited on March 5, 2010).
60. Jairam Ramesh, *Bt Brinjal: Note by Ministry of Environment and Forests*, The Hindu, (New Delhi, 9th February 2010), available at http://www.hindu.com/nic/btbrinjal.htm (last visited on March 5, 2010).
61. R. Ramachandran, *The GM Debate*, Frontline, (March 12, 2010), at 7.
62. Sahai, *supra* note 59.

assessment' would make sense, an assessment of 'needs' may be brought under the ambit of socio-economic factors as provided in the Protocol.

MARINE & COASTAL ACCESS ACT, 2009 – A NEW MARINE CONTROL SYSTEM FOR THE UK

Nigel Howorth[*]

ABSTRACT

The Marine and Coastal Access Act, 2009 has received Royal Assent creating a new regime for forward planning and licensing of activities in marine areas and for marine nature conservation. In particular, the new Act will impact offshore wind farming, wave power and other renewable projects, and also allow development and reclamation of coastal sites, jetties and pipe-laying. The Act is good news on the whole for the development of offshore facilities. It should result in increased certainty as to the acceptability of marine projects through the application of a new marine policy framework. Whilst not removing all of the current complexity, it should also reduce the number of consents required for marine projects and the cost of obtaining them through simplification of the existing licensing regimes. This will help the government in its efforts to increase significantly the amount of offshore renewable energy generation capacity to meet its challenging EU target of securing 15% of UK energy consumption through renewables by 2020. This article sets out the principle areas of planning and licensing reform as they apply to England[1] *and offers some comments on the key measures.*

I.] INTRODUCTION

The Marine and Coastal Access Act, 2009 ("the Act") was passed in response to three key concerns over the current regimes regulating marine activities. First, there was previously no integrated management of marine activities and no real thought had been given to the need to assess

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* Partner, Clifford Chance LLP.

1. Whilst the Marine and Coastal Access Act is relevant for all parts of the UK, some aspects have been devolved to the administrative bodies of Wales, Scotland and Northern Ireland and this article therefore is focused on the application of the Act in England.

cumulative impacts on marine areas. Second, development projects have always been hindered by a complex matrix of management regimes with confusing regulatory overlaps, uncertain timescales for consents and excessive costs (e.g. for developers). Lastly, the current regimes have not been adequate in protecting marine nature.

The Act however adopts an ultimate goal of clean, healthy, safe, productive and biologically diverse oceans and seas. In order to achieve these goals, the Act creates an integrated system of marine management with actions on a number of fronts. It creates a new UK wide system of strategic marine planning which includes a new streamlined and unified system for licensing marine activities and for marine nature conservation. It also envisages a new 'Marine Management Organisation' to regulate major aspects of the new regime.

II.] KEY CHANGES

a. *New Marine Management Organisation*

The Act creates a new Marine Management Organisation (MMO) to perform the major role in the new marine planning and licensing system. It is established as an Executive Non-Departmental Public Body under the Department for Environment, Food and Rural Affairs (DEFRA) and its main responsibility is to balance environmental, social and economic considerations in exercising its functions (including licensing of new development and environmental protection issues).

b. *New Strategic Planning Framework*

In recent years, the marine area has become more popular for development opportunities, particularly those areas near the coast, such that space in shallow waters and estuaries is in heavy demand. As a result new methods for resolving conflicts between uses by relying on activity-based Environmental Impact Assessments and Strategic Environmental Assessments have become necessary.

The Act therefore creates a strategic marine planning system that will pro-actively set marine objectives. These objectives will set a framework for individual decisions on particular marine activities. Techniques from the familiar land-based planning system have been drawn on to create a

two-tier approach i.e. first, creation of a UK marine policy statement which is intended to be agreed by Government departments and devolved administrative bodies and will contain a joint vision and objectives for the marine environment throughout the UK and second; the creation of a series of marine plans which will implement the policy statement in specific areas depending on the needs of those areas.

1. UK Marine Policy Statement

The UK marine policy statement (MPS) will create an over-arching national policy framework for the whole of the UK to ensure an integrated approach to marine management across UK waters. The MPS would have an overall objective of contributing to sustainable development of the marine area. The MPS would be subject to Parliamentary scrutiny and the Government intends that it would be finalised by late 2011.

It is anticipated that the MPS will contain a set of prioritised marine objectives to be achieved e.g. water quality and ecological status. It shall have individual policies on areas such as energy, protection of biodiversity, heritage, transport, mineral extraction, major infrastructure and defence, integration of marine areas with the coastline. Furthermore, the MPS is expected to build on relevant National Policy Statements in relation to major infrastructure development such as offshore windfarms.[2]

2. Marine Plans

Following the creation of the MPS, "marine plans" would be prepared for different geographical sectors.[3] Marine plans would resemble land-based development plans in that they would provide policy against which individual licensing decisions would be taken.

Marine plans would need to be consistent with the UK MPS and it is expected that they would contain policies on the nature and impacts of particular marine activities (both existing and future and including e.g.

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2. Including the Renewables National Policy Statement (recently issued in draft), which would be used to inform decisions of the Infrastructure Planning Commission's on major offshore renewable projects over 100MW.
3. A consultation process is currently underway to determine the exact delineation of these sectors.

carbon capture and storage, oil and gas activities, renewable energy and submarine cables). They shall also cover natural resources, features and processes, such as climate change, habitats, breeding grounds and migration routes and designated sites for ecological or heritage purposes.

It is important to note that these marine plans relate not only to the water, but to the areas of the seabed and below, and above the water and these extend from the Mean High Water Springs (MHWS) to the fullest extent of the UK's marine jurisdiction (the UK continental shelf / Renewable Energy Zone limits). This means that there will be an overlap with the terrestrial planning system between MHWS and the mean Low Water Mark.[4] The plans are expected to cover a period of 20 to 25 years and would be subject to revision every 3 years. Also, it is intended that they would be prepared by the MMO working with other stakeholders and draft plans would be subject to wide consultation.

3. Decision-Making

Importantly, decisions including licensing decisions (see below) will need to be made in accordance with the MPS and relevant marine plan unless relevant considerations indicate otherwise. This move to a more transparent system should help to provide certainty to developers of offshore facilities as to the criteria for marine decision-making. It will therefore be very important for offshore developers to get involved in the marine planning consultation process in an attempt to influence policies which could affect their proposed schemes. Significantly, the MPS and marine plans will also have to be taken into account in the determination of land-based projects which could impact the marine environment, e.g. coastal power stations.

c. *"Unified" Licensing Regime*

The current regime for obtaining licences to carry out activities in the marine environment is complex and involves a number of different administrative bodies. For example, currently an applicant for permission to

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4. Harmonisation with land-based plans in areas of overlap or coastal interface is required to ensure a consistent approach.

develop an offshore wind farm is likely to need consent under the Coast Protection Act, 1949 (CPA), the Food and Environment Protection Act, 1985 (FEPA) and the Electricity Act, 1989, each based on different considerations. Therefore the Act seeks to ensure that licensing decisions are delivered more quickly and cheaply via a more consistent and integrated system.

The streamlined licensing approach will be achieved firstly, by merging the CPA and FEPA systems and in the majority of circumstances one licence granted by the MMO would be required for any individual project or series of linked projects. However, from now a great majority of dredging operations will fall within the new licensing process.

It is envisaged that timetables for dealing with applications will be set in an attempt to speed up the process. Further, a flexible system of enforcement notices, stop notices and monetary penalties will be created to ensure a better level of compliance with licences. This will be in addition to the possibility of licence revocation or amendment.

1. Renewable Energy Projects

Offshore renewable energy projects[5] deserve special mention as they will have a dual regime depending on the significance of the project. As far as authorisation of windfarm projects is concerned, projects up to 100MW will be determined by the MMO using the new marine licensing provisions. The MMO would also determine the consent as required under Section 36 of the Electricity Act, most likely under one single procedure.

However, authorisation of windfarm projects over 100MW will be determined by the Infrastructure Planning Commission under the Planning Act, 2008 (or the Secretary of State until the National Policy Statement on renewables is in force, expected during 2010). A deemed marine licence can be issued as part of this process. Authorisation of other offshore renewables projects over 100MW (e.g. tidal or wave schemes) would, for the time being, need to be determined by the Secretary of State since the National Policy Statement on renewables is initially only likely to cover windfarms and certain onshore renewables.

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5. Including associated electricity transmission networks.

2. Other Marine Projects

In considering how the new marine licensing regime might integrate with or replace other controls, it is clear that a certain amount of complexity and diversity in the licensing regimes remains. For instance, Carbon capture and storage (CCS); licensing of the undersea storage of carbon dioxide will be governed by a separate licensing regime under the Energy Act, 2008. Similarly, Oil and gas exploitation would continue to be regulated under the Petroleum Act, 1998 rather than the new marine licensing system.

Also, Harbours legislation; powers under the Act will allow a harbours order and marine licence to be obtained at the same time through the same procedure: Works would be consented by the MMO or IPC depending on whether the works amount to nationally significant infrastructure projects under the Planning Act 2008. These examples illustrate the difficulty of creating a totally unified system where the activities are as diverse as those undertaken in marine areas.

It is anticipated that the new marine licensing regime will be implemented in early 2011 to allow smooth transition between regimes. Until then applications pending for CPA and FEPA consents will continue to be progressed under the pre-existing regimes; those pending when the provisions come into force will be treated as applications for marine licences. All existing FEPA and CPA consents will be treated as marine licences as from that time.

d. *Marine Nature Conservation*

Under European Directives, the UK must designate areas of European importance for the protection of certain species and habitats. The Act now establishes a mechanism to designate Marine Conservation Zones (MCZs) to protect other species, habitats and physical features of importance in the marine environment which do not benefit from EU protection. MCZs will be relevant to marine development projects in two key ways-

Firstly, licensing regimes will take into consideration the presence of an MCZ. Licences would only be granted in exceptional circumstances for activities that could adversely impact on MCZs. Developers may well be subject to more restrictions on locating new offshore facilities as result. As

in relation to the marine licensing process mentioned above, it will be important for developers to get involved in the MCZ consultation process where an MCZ would affect proposed schemes. In this respect it is notable that social and economic considerations may be taken into account in making / not making a MCZ designation.[6]

Secondly, offences of damaging or destroying any species or habitat for which an MCZ has been designated will be created. Powers to allow for the provision of additional flexible enforcement powers (including fixed and variable monetary penalties) are also provided.

6. This was a controversial aspect of the Bill during its passage through Parliament.

SOME SUGGESTIONS AND RECOMMENDATIONS TOWARDS A MODEL STATE POLLUTION CONTROL BOARD (SPCB) IN INDIA

Armin Rosencranz[**] and Videh Upadhyay[*]

ABSTRACT

Armin Rosencranz was asked by the United States Environment Protection Agency (USEPA) to advise the Ministry of Environment and Forest, India (MoEF) on environmental compliance and enforcement. This short note is based on his colleague (and former Fellow of India Environmental Law Visiting Fellows Program) Videh Upadhyay's experiences of working as a counsel for the Delhi Pollution Control Committee (DPCC) for the last two years. [The Central Pollution Control Board (CPCB) has delegated all its powers and functions as a State Board for the Union Territory of Delhi to the DPCC.]

For developing some points below, and for the purposes of this note, Videh met with engineers, scientists and law officers of DPCC. Armin and Videh wrote this note together, the outline came from Armin and the main points are by Videh.

This memo indicates some of the steps needed to move towards a model State Pollution Control Board (SPCB). These relate to establishing a ratio between technical staff within SPCBs and their mandate; the appointment and qualifications of the Chairman and the member secretary; committees under the Air Act and the Water Act; human resource planning; establishing regional offices and laboratories; capacity building and compliance with pollution standards.

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I.] INTRODUCTION

This memo indicates some of the steps needed to move towards a model State Pollution Control Board (SPCB). However, any progress towards a standardized model PCB on the lines that MoEF would require a close understanding of structure and functioning of at least some of the SPCBs (perhaps through a comparative evaluation of a minimum of four carefully chosen SPCBs) to help in comprehending the diversity that exists in various SPCBs today. Given the range of structures, methods and processes that the various PCBs in India have, one can't think of any other way for developing a standardized model SPCB. We suggest that this be strongly recommended to the MoEF if it is serious about developing a model SPCB and if the States are to be incentivised to adopt that model in near future.

Several steps towards developing a model SPCB are suggested below and the reasons for making each of the specific suggestions below are offered in some detail.

II.] CREATION OF A MODEL SPCB

a. *Direct Co-Relation Between SPCB Mandate and Staff Strength*

It can be seen that there is a huge variation in the staff strength in existing SPCBs across the country. The Pollution Control Board at Delhi, the Delhi Pollution Control Committee (DPCC), has a total staff of 86 whereas the Maharashtra Pollution Control Board (MSCB) has a staff of over 700. However, DPCC has a total of only ten engineers who have a mandate to cover close to 200,000 industrial units to ensure that these units have a valid *Consent to Establish* and *Consent to Operate* under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974. A Planning Commission study of SPCBs in 2002 pointed out that 'the differential availability of staff for monitoring a certain number of polluting industrial units' was a major limiting factor with the SPCBs. It is thus clear that a model SPCB would need to base itself on a fixed norm that establishes a direct co-relation between the mandate of the SPCB and the staff strength that is available to give effect to it.

We suggest that a fixed ratio between technical staff within SPCBs and the number of industrial units within the jurisdiction of the SPCBs be

developed. As a specific suggestion, for every 500 industrial units there should be a minimum of one Executive/Assistant Engineer responsible both for ensuring compliance and monitoring. This would require a multi-fold increase in the present staff strength of the SPCBs.

b. *Ratio of Technical Staff to Non-Technical Staff*

An evaluation of the staff composition of the SPCBs today can also easily show that there is no fixed criterion to determine the ratios of technical to nontechnical staff which again varies from one SPCB to another. Further, the composition of the State Boards is characterized by the dominance of non-technical members. A model PCB thus should have definitive criteria fixing the ratio of technical to nontechnical staff. Given the nature of pollution control work, and the present position within SPCBs where non-technical members dominate, a heavy bias in favour of technical staff is needed.

c. *Chairman and Member Secretary Qualifications*

The pollution legislations require the Chairman and the Member Secretary of the SPCB, who are the number 1 and number 2 officers of the SPCBs, to have certain qualifications. The Acts specify that SPCBs need to have "a full-time chairman, being a person having special knowledge or practical experience in respect of matters relating to environmental protection or a person having knowledge and experience in administering institutions dealing with the matters aforesaid, to be nominated by the Central Government." Further, as per the Acts, SPCBs need to have "a full-time member-secretary, possessing qualifications, knowledge and experience of scientific, engineering or management aspects of pollution control, to be appointed by the Central Government."[1] Presently most of the Chairmen of SPCBs are drawn from the Indian Administrative Service (IAS) who may or may not have special knowledge or practical experience in respect of matters relating to environmental protection.[2] For a model SPCB, it is imperative to

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1. See for example Section 3(2) of the Water (Prevention and Control of Pollution) Act, 1974.
2. In 2008, a parliamentary panel while criticising the trend of IAS officers and bureaucrats holding key posts in central and state pollution control boards,

ensure that the person heading it, i.e. the Chairman, has special knowledge or practical experience in respect of matters relating to environmental protection.

Perhaps a greater problem today with the SPCBs across the country is that the Member Secretary in most SPCBs is drawn from the Indian Forest Service (IFS). The IFS officers by their training and background are not likely to 'have knowledge and experience of scientific, engineering or management aspects of pollution control' as is required under the pollution laws. Especially as the Chairman is typically an IAS officer (a generalist), it is critical that a model SPCB has a Member Secretary who is equipped to handle and take clear decisions on scientific, engineering or management aspects of pollution control.

On the position of Chairman and the Member Secretary of the SPCBs it is also relevant to note that the *Belliappa Committee Report* submitted in 1990, and made in the context of functioning of Pollution Control Boards, recommended ensuring that the Chairman and Member-Secretary are appointed for a minimum of three years.[3] This was an important recommendation that needs to be effectuated in all SPCBs. A fixed minimum tenure of three years for the Chairman and the Member-Secretary with the requisite qualifications as laid out above needs to be built in a model SPCBs and can help insulate these positions from undue

d. *Committees under the Air and Water Acts*

It can be seen that both the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution)

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recommended financial and functional autonomy for the Central Pollution Control Board (CPCB).The parliamentary standing committee on science and technology, environment and forests, presented its report on the functioning of the CPCB to both houses of parliament and expressed its displeasure over not fixing qualifications or criteria for senior members of the CPCB. The committee observed: 'The trend of IAS (Indian Administrative Service) officers and bureaucrats holding the key posts at CPCB and state PCBs is very disturbing and that practice needs to be stopped forthwith.' *See*, Autonomy Recommended for Pollution Control Board, Hindustan Times (New Delhi, 21st October 2008).

3. Five reports need to be mentioned in the context of the functioning of Pollution Control Boards. These include (a) the Bhattacharya Committee Report submitted in 1984; (b) The Belliappa Committee Report submitted in 1990; (c) the Report submitted by the Administrative Staff College of India (ASCI) in 1994; (d) the Report submitted by the ASCI Sub-Group in 1994; (e) Programme Evaluation Organisation (PEO) Report for the Planning Commission of India, 2002.

Act, 1974 provide that "A Board may constitute as many committees consisting wholly of members or wholly of other persons or partly of members and partly of other persons, and for such purpose or purposes as it may think fit."[4]This enabling legal space has hardly been utilized by the SPCBs across the country. The DPCC has constituted an array of Consent Management Committees (CMCs) for separately classified Industries which take decisions on the grant and monitoring of the Consent to Establish and Consent to Operate under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974. However, even the DPCC has not specifically designated the CMCs as Committees constituted under the provisions of the Act.

The decisions taken by such Committees are then liable to be questioned in the Courts on the ground that the decision of such Committees are not the decision of the SPCBs. A model SPCB needs to make full use of these provisions of the law empowering them to constitute Committees, preferably separate ones for each of the specific laws and regulations that SPCBs are mandated to implement. This is so that the decision making in the SPCB are more decentralized and specialized. Given the sheer volume of decisions that SPCBs need to make, a model SPCB should make full use of the *committee mechanism* under the Acts.

e. ***Strategic Human Resource Planning***

There is also a need to carry out strategic human resources planning within the SPCBs. Given the diverse stages of development of different States in India, the differing nature of 'industry operations and processes' in these States, and the varying staff sizes and strengths, the priority areas for each of the SPCBs will vary. It may thus be impossible to have one standardized structure for all of the SPCBs. A model SPCB would thus structure itself on a carefully devised and strategic human resources/personnel policy which in turn needs to be organized around the priority areas of each particular SPCB.

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4. See Section 9(1), of the Water (Prevention and Control of Pollution) Act, 1974.

f. *Regional Offices and Laboratories*

The Planning Commission study of SPCBs in 2002 noted that the CPCB has not stipulated any standard norm to be followed by the SPCBs while establishing their regional and sub-regional offices and laboratories. This gives the SPCBs the discretion to establish regional offices and laboratories in accordance with their priorities and financial position. However, this discretion has not always been made good use of by the States.

Consider the example of two of the SPCBs given by the Planning Commission study itself. All the four regional offices (ROs) of the West Bengal SPCB are located in the South Bengal region. This may keep the Board completely in the dark about the potential pollution sources of the North Bengal region, a region which only has agro-based industries. On the other hand Haryana SPCB has 9 ROs spread over the whole State. However, two districts- Yamunanagar (rolling mills and paper mills) and Panipat (handloom with dyeing), which are areas needing close monitoring but are far off from regional offices.

These examples show that while the flexibility to decide on the number of regional offices may be vested with the States, there is need for standard norms to be followed by the SPCBs, especially in terms of their geographical spread and to monitor 'pollution hotspots' when they set up their regional and sub-regional offices and laboratories.

g. *Capacity Building*

It is pertinent to note that some activities that are central to the efficient and effective functioning of PCBs, such as training of their own staff, are major areas of concern. The Planning Commission study of SPCBs in 2002 identified training of staff as a 'low-priority item of expenditure in the budgets of most of the SPCBs'. But it seems imperative that the SPCB staffs be thoroughly familiar with the rationale and application of air and water pollution standards, rules and regulations. A model SPCB ought to have a minimum budget devoted to the capacity building of its own personnel.

h. ***Compliance with Pollution Standards***

Likewise, compliance of industrial units with the stipulated pollution standards is poor in many States. The absence of an effective punitive mechanism encourages non compliance. The Planning Commission Study evaluating State Pollution Control Boards (SPCBs) in 2002 found out that there was a growing disillusionment felt by some of the State Boards with the process of criminal prosecution in Courts. The study observed as follows:

> "*Non-installation of abatement mechanisms by the polluting units is a direct consequence of the absence of any effective punitive and deterrent mechanism in case of non-compliance. First, the SPCBs, do not have the power to impose on-the spot-fines on persistently non-complying units. In the absence of such power, the State Boards will have to either hope for the non-complying unit to abide by their directions or file a case with the Court of Justice against the said unit and wait for the court verdict. The Court is entitled to impose stringent punishments ranging from imprisonment of 18 months to 6 years plus fine. Courts are generally busy with day-to-day criminal and civil cases and may keep environmental cases pending for years together. ....The growing disillusionment with the efficacy of litigation as a control mechanism felt by some of the State Boards, especially those of Madhya Pradesh, Tamil Nadu, Punjab, Orissa and Gujarat is evidenced by the negligible number of environmental cases filed by them..... it is clear that the cumulative number of cases filed by the State Boards like those of Assam, Punjab, Maharashtra, Gujarat, Kerala, Karnataka and Tamil Nadu was far less than the number of non-complying industrial units. Some State Boards complain that when the cases are finally decided, the verdicts often go against them, for, the courts are reluctant to award 18 months of imprisonment to the recalcitrant units*."

The state of criminal prosecutions against polluters indicated above, points to the fact that the SPCBs need to be empowered to impose environmental civil penalties. However, a large part of the problem here lies

in the fact that all the environmental legislations and regulations in India, including the Water Act, 1974 and the Air Act, 1981, are currently underpinned only by the use or threat of criminal sanctions. Yet criminal prosecution is too rigid an approach to be used for all but the most serious offences. It focuses on achieving punishment rather than prevention, and requires more stringent procedural safeguards, which undermine regulatory efficiency. The problems in pursing criminal prosecution of environmental offenders also give rise to reluctance on the part of regulatory agencies to pursue more difficult cases. On the other hand, there is increasing recognition of the benefits of employing civil penalties as part of any effective system of regulation.

In other countries, environmental regulatory agencies have the power to impose civil penalties for breaches of environmental regulation, as an additional tool to criminal enforcement, which can then be reserved for intentional or egregious non-compliance with the law. In the USA, civil penalties can be imposed at the discretion of a regulatory agency for an amount which reflects the circumstances of the regulatory breach, including any financial profits gained from such breach. They can be used as an alternative rather than a replacement for criminal prosecution, but without the same degree of moral condemnation or burden of proof. The legal bases for such an approach exist as the 'Polluter Pays Principle (controlling pollution at its source), which has been repeatedly held by the Supreme Court of India as part of the law of the land. Amendments should be introduced in the pollution legislations, including the Water Act and the Air Act, to provide for specific legal authority empowering the SPCBs to impose environmental damages and civil liability.

III.] CONCLUSION

There has been much recent speculation on restructuring of the CPCB and SBCBs.[5] Media reports have suggested that MoEF intends to merge all the SPCBs with proposed state environment protection authorities (SEPA), and that such SEPAs will have more power than is

5. Jairam Ramesh, Union Minister of Environment and Forests, has been driving this thinking.

presently exercised by the SPCBs.[6] The Chairman of the Goa SPCB has observed that the proposals for constituting NEPA and SEPA were strongly supported by chairpersons of SPCBs at a conference in Delhi recently.[7] In view of these developments, the construction of a model SPCB may need to await the setting up of NEPA and SEPA.

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6. The proposal is part of a larger plan to merge the present Central Pollution Control Board (CPCB) with a new and more powerful National Environment Protection Authority (NEPA) – a proposed autonomous statutory regulatory body, created by MoEF and responsible to its Minister.
7. The conference was chaired by Minister Jairam Ramesh. See Proposal to Recast State Pollution Boards, Times of India (New Delhi, November 29, 2009).

INDIA'S ENERGY POLICY CHALLENGES: A DEVELOPMENT PERSPECTIVE

Suddha Chakravartti[*]

ABSTRACT

India's current energy policy reflects a disconnect between its long term economic rise and real development. Currently, one of the biggest obstacles in India's rise through "enlightened self interest" and hindrance in its path to realise the Millennium Development Goals is the issue of power shortage. Although it is important to devise policies to ensure energy security to compliment this rise, especially in light of its limited sufficiency and import dependency in the long run, future energy policies should also seek to address the issue of energy poverty by providing electricity access to millions living mostly in rural India. In this quest, although fossil fuels, especially coal will play a major role as the principle energy resource, diversification of the energy portfolio to include renewable technologies which are environmentally sustainable will be crucial in ensuring India's future commitments towards climate change.

I.] INTRODUCTION

India's growing economy, coupled with its burgeoning appetite for energy has become an ever increasing concern for many across the spectrum, both domestically as well as internationally. In its rise through what it favourably calls "enlightened self-interest," India needs to secure its energy needs for obvious reasons. India's limited self sufficiency coupled with its gargantuan reliance on unclean and inefficient fossil fuels (primarily coal and oil) in the long term poses serious policy challenges. The unprecedented economic rise of India over the last two decades has certainly changed the lives of millions of Indians, and given its growth trajectory, it is set to become the third largest economy in coming decades. Irrespective of this, millions in India still live in abject poverty and deprivation, and who have no role in its economic ascend. This represents one of the stark oddities of the rise of the Indian model.

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Therefore on one hand, India needs to transform its economic miracle into realising its social and development goals. For India, this necessitates not only the fine balance between increasing its resource consumption and managing its import dependence in energy products, through either cooperation or directly competing for them in global energy markets, but also formulating policies for the equitable distribution of resources, especially targeting energy poverty in rural India, and thereby empowering and enabling them to contribute in India's rise.

On the other hand, while transforming economic growth into realising social goals, India's energy policy has to be increasingly environmentally sustainable, not only from the perspective of socio-economic costs relating to environmental damage and public health, but one which would greatly affect its international leadership and reputation as an emerging power in the coming Asian century.

II.] THE INDIAN PERSPECTIVE

Today, India is recognised as one of the fastest growing big economies in the world. Although recent macroeconomic data predicts this economic success, the rise of India is not a new phenomenon. After witnessing three long decades of planned economic malaise after independence under the brand of Fabian Socialism, the country's economy reported an average growth of 6% between 1980 and 2002, and around 7.5% between 2002 and 2006.[1] In the previous two decades, India's average GDP growth has been approximately double than global rate.[2] This is manifested by increased economic expansion and liberalisation, higher openness to trade, low cost of labour, favourable demographics and workforce, lower debt and real GDP growth rates, amongst others. What makes the Indian economy more robust than other emerging powers, including China, is the strong internal demand[3] and the bottom-up model of development. The latest forecast by the Asian Development Bank

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1. Gurcharan Das, *The India Model*, Foreign Affairs, (July/August 2006).
2. Chetan Ahya and Andy Xie, *India and China: A Special Economic Analysis*, Morgan Stanley, (July 26, 2004) at 1.
3. Kevin Tan, *India's Economic Outlook*, INSEAD, (May 26, 2010), available at: http://knowledge.insead.edu/india-economic-outlook-100526.cfm?vid=425 (last visited September 10, 2010).

predicts an estimated 8.2% GDP growth in 2010, up from 7.2% in 2009 and 6.7% in 2008.[4] The strong internal demand and consumption rather than export promotion in India was in fact one of the key factors for India to weather the ongoing global financial crisis and achieve positive growth rates, albeit lower than preceding years.

The bottom up approach adopted by India also entails a boost to private entrepreneurship. Other export driven models like China, depend largely on FDI for its manufacturing prowess. This reliance on FDI alone, hinders the growth and development of indigenous industries of global repute, as industrial or manufacturing units established with the assistance of FDI generally caters to consumer needs in international markets. In the Indian context, the bottom up approach and the non excessive reliance on FDI has led to the creation of an extremely competitive private sector of global repute. This is a remarkable feature of the Indian economy, which seems to be rising without the help of the State.[5]

Thus, one can say that the model adopted by India based on the reliance on domestic markets, internal consumption, service sector and high tech manufacturing, which protects the Indian economy from external downturns like the current financial crisis, is a more sustainable and a people centric model for development in the long run as compared to other Asian models.[6]

However, irrespective of this economic achievement and the hype surrounding its future prospects, the greatest challenge for India would be to transform this enormous economic success and potential into realising its developmental challenges. Somehow, there seems to be a disconnect between Indian policy on economic growth and dynamism and people centric real development. Economic development and real development are exclusive of the other. Studies conducted by the World Bank indicate that in absolute numbers, India has more people living in absolute poverty than in Sub-Saharan Africa.[7] In fact, the UNDP states that rising inequality, ineffective public services, weak accountability coupled with inefficient pro-

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4. *Ibid.*
5. Gurcharan Das, *supra* note 1.
6. *Ibid.*
7. *World Development Indicators, Poverty Data: A Supplement to World development Indicators,* (2008), The World Bank.

poor policies remain the major bottlenecks in the progress of the UN Millennium Development Goals, or MDG's.[8]

Therefore, in its future policies, India will need to take into account these disparities that currently exist in its society. The challenge for India in this interconnected world should not be entirely focused upon the attainment and sustenance of high economic growth, but as Joseph Stiglitz points out correctly, on managing this growth,[9] that is acceptable by the Indian people and which benefit all sections of the Indian society.

III.] ENERGY POVERTY IN INDIA

Regarding India's future development policies, there are certain issues that demand the most urgent intervention. Without oversimplification, these challenges relate to those issues posed by energy security on one hand, and paradoxically, climate change on the other.[10] The first proposition is very simple because the planet is deeply addicted to cheap and reliable energy, especially hydrocarbons, for every economic and basic human activity, including food production, water availability, transportation, etc.[11] India will be faced by tremendous policy challenges regarding its energy issues. These issues will not only encompass the addressing of India's high import dependence of energy products, and the policies adopted by it to secure its cheap and steady supply, especially in light of increased global competition and nationalisation of energy resources, but on policies that will target its energy poverty and especially reduce the electricity gap by focusing on equitable development.[12]

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8. Achieving MDGs in India: Elimination of Inequalities and Harnessing New Opportunities for Implementation of Policies and Programmes, UNDP, (September 8, 2010), available at: http://content.undp.org/go/newsroom/2010/september/achieving-mdgs-in-india.en (last visited September 12, 2010).
9. *See*, Joseph E. Stiglitz, *Making Globalisation Work*, (2007, 1st ed.).
10. *See*, Richard Heinberg, *Peak Everything: Waking Up to a Century of Decline in Earth's Resources*, *in* Clairview (2007) at 20.
11. *Ibid*, at 2.
12. Ligia Noronha, *Climate Change and India's Energy Policy: Challenges and Choices,* in India's Climate Policy: Choices and Challenges, (David Michel and Amit Pandya eds., 2009) at 7.

On one hand Thomas Friedman argues that the right and the importance of every person to have access to energy are often overlooked in most development policies.[13] On the other hand, few would argue that no country has achieved sustainable reductions in poverty without increasing the use of energy. Therefore, affordable and sustainable energy use and development are interconnected.[14] Globally, around 1.6 billion people lack access to the electric grid,[15] over 80% of them spread mostly in South Asia and sub-Saharan Africa.[16] This lack of access to electricity is generally related to energy poverty. With business-as-usual scenario, the International Energy Agency projects that 1.4 billion people will still lack access to electricity by 2030.[17] Interestingly, the Energy Information Administration points out that, as with global economic expansion, scenarios project that energy demand in developing countries will increase by 84% between 2007 and 2035.[18]

In light of this, India's development progress would be hindered unless the challenges of energy poverty faced by it are mitigated and solved. Currently India's energy resources and policies directed towards the same are insufficient to meet its needs, and its energy poverty situation is an endemic problem which seriously exacerbates its difficulties in realising any poverty reduction strategies or attaining any of the Millennium Development Goals (MDGs). In fact, one of the key impediments to the

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13. Thomas L. Friedman, *Energy Poverty*, in Hot, Flat And Crowded: Why We Need A Green Revolution And How It Can Renew America, (Farrar, Straus and Giroux eds., 2008) at 155.
14. *See,* Adeola Adenikinju, *Promotion of Public Private Partnership to Improve Energy Access for Poverty Reduction and Growth in sub-Saharan Africa*, Paper for OFID Workshop on Energy Poverty in Africa (June 2008).
15. Alliance for Rural Electrification, available at http://www.ruralelec.org/9.0.html (last visited September 12, 2010).
16. UNDP/WHO 2009 Report, *The Energy Access Situation in Developing Countries, A Review Focusing on the Least Developed Countries and Sub-Saharan Africa*, available at http://www.undp.org/energy (last visited September 12, 2010).
17. IEA, *Energy and Poverty: IEA Reveals a Vicious and Unsustainable Circle*, available at http://www.iea.org/press/pressdetail.asp?PRESS_REL_ID=64 (last visited September 12, 2010).
18. EIA *Annual Energy Outlook 2010*, available at http://www.eia.doe.gov/oiaf/aeo (last visited September 12, 2010).

India's development can be linked to the shortage of energy.[19] With the largest rural population in the world, India faces a great challenge ahead with rural electrification.[20] Around 600 million or more than 50 percent Indians have no access to electricity.[21] Apart from this, around 700 million Indians depend on traditional fuels.[22]

Studies also point out that electricity consumption in India per capita is one of the lowest in the world.[23] Although official statistics point out that although 85 percent of Indian villages are connected to the electric grid, less than 60 percent of households in these villages actually consume electricity.[24] The abovementioned official statistics can be quite misleading. This is because it is not necessary that if a village is deemed to be officially electrified, households in the villages have access to electricity. This is primarily income or infrastructure related. There is a stark difference between the village being connected to the grid and its households having access to the electricity. Thus the important measure is not whether a village is electrified, but the proportion of people who are connected to the grid. Therefore, policies that focus on rural electrification are essential for electricity access, but not enough to guarantee it.[25]

In addition to this, in the Indian context, there exist great spatial disparities in regional electrification rates. Significantly populated states like Assam, Bihar, West Bengal, Orissa and Uttar Pradesh have lower installed capacity for electrification, as compared to western states of Maharashtra and Gujarat.[26] Traditionally the eastern and the north-eastern states in India have the lowest GDP per capita, and hence reflect this energy poverty gap.[27]

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19. Amitav Mallik, Nitant Mate and Devyani Bhave, *Renewable Energy Technologies: Special Focus on Distributed Power Generation: Potential for Applications to Rural Sector in India*,, (2008, 1st ed.) at 9.
20. Alexandra Niez, *Comparative Study on Rural Electrification Policies in Emerging Economies*, Information Paper, IEA/OECD (2010) at 61.
21. Ligia Noronha, *supra* note12.
22. *Ibid*.
23. 543 KWh/capita (2009 estimates), IEA.
24. Kemmler Andreas, *Regional Disparities in Electrification of India – Do Geographic Factors Matter?*, Centre for Energy Policy and Economics (CEPE) (Zurich, 2006) at 4. *See* also, L. Srivastava and I.H. Rehman, *Energy for Sustainable Development in India: Linkages and Strategic Direction*, Energy Policy 34. 2006 at 643
25. *Ibid*, 8.
26. *Id*.
27. Alexandra Niez, *supra* note 20, at 63.

The present situation concerning energy poverty and spatial inequality is so acute in India that it diminishes its prospects of attaining equitably many of the MDG targets by 2015, as the access to cheap, clean and sustainable energy is *sine qua non* for their achievement. Escaping poverty, which requires access to clean water, sanitation, health facilities, the education system and communication networks, amongst others, all require the energy use. To realise the aforementioned, electrification is the most efficient form of energy. For India, this is a distant goal. Lack of access to electricity consequently results in the use of traditional biomass (wood, dung, charcoal and coal), accounting for the majority or around 70 per cent, of the primary energy demand in rural households.[28] The use of traditional biomass is not only detrimental as a pollutant and adds to the degradation and depletion of environmental resources, but it is a widespread health hazard. Globally, 2 million people die annually due to indoor pollution caused by the use of traditional biomass in households.[29] An article published in India Today revealed that indoor air pollution or IAP claims a staggering 500,000 lives in India.[30] The World Health Organisation also points out that India accounts for 80 per cent of 600,000 premature deaths caused due to IAP in South East Asia.[31] Women and children are affected the most.[32] But it is not only the IAP and mortality nexus which gives a clear picture of the IAP problem. Apart from high death rates, millions more are afflicted with serious respiratory and other illnesses due to IAP, thereby greatly reducing their productivity.

Lack of access to electricity also hinders any progress towards child education. Studies conducted by the World Bank in Bangladesh demonstrate that households which had access to electricity reported a 33 per cent increase in study time for school-children.[33] The provision of safe

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28. GwenaelleLegros *et al.*, *The Energy Access Situation in Developing Countries: A Review Focusing on the Least Developed Countries and Sub-Saharan Africa*, UNDP/WHO (2009) at. 16 - 17.
29. *Id.*
30. Kounteya Sinha, *Indoor' Air Pollution is the Biggest Killer*, The Times of India (New Delhi, March 22, 2007), available at http://timesofindia.indiatimes.com/india/Indoor-air-pollution-is-the-biggest-killer/articleshow/1790711.cms (last visited September 12, 2010).
31. *Ibid.*
32. *See,* WHO, *Fuel for Life. Household Energy and Health* (2006).
33. Thomas L. Friedman, *supra* note 13, at 157.

drinking water and sanitation is also directly related to energy access. Again, it is mostly women in rural areas who face the greatest burden, as in many circumstances, they have to walk miles to collect water, firewood, etc. This sometimes denies them the prospect of education and reduces their economic capacity and productivity, thereby marginalizing a large proportion of the population.

Apart from having terrible shortfalls in electricity and inequality in its access and distribution, most Indian states witness electricity losses during transmission, and power theft is not uncommon. Due to power shortages, blackouts and systematic power cuts are very common in India, which greatly affects the economy. An article posted in the Wall Street Journal stated that some parts of rural India witnessed power cuts upto 15 hours per day.[34] In New Delhi, as much as 42 per cent of the total power supplied to the capital is lost in transmission, which is both due to poor utilities as well as pilferage.[35] In Maharashtra for instance, one of India's most industrial states, major cities like Pune lose electricity for one day a week to compensate for the pressure on the grid.[36] Due to this phenomenon of power theft and ineffective utilities, most state run electricity companies incur heavy financial losses, almost to the tune of USD 4.5 billion collectively.[37]

Although the source of the problem of lack of access to energy is multi-faceted, and are marked by factors including misgovernance, corruption, protracted internal conflicts, geographical conditions, etc., in the case of India, the prevalent cause is the absence of functioning utilities and infrastructure. Infrastructure challenges in India are arguably the severest in the energy sector. Therefore an energy crisis in many Indian states is common. The reasons for the lack of efficient utilities are improper

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34. Jackie Range, *India Faulted for Failure to Improve Power Supply*, Wall Street Journal (October 28, 2008) available at http://online.wsj.com/article/SB122513218298172749.html?mod=googlenews_wsj (last visited September 10, 2010).
35. Mark Gregory, *India Struggles with Power Theft,* BBC News (March 15, 2006) available at http://news.bbc.co.uk/2/hi/business/4802248.stm (last visited September 10, 2010).
36. *The Trouble with India*, Business Week (March 2007) available at http://www.businessweek.com/magazine/content/07_12/b4026001.htm (last visited September 8, 2010).
37. Mark Gregory*, supra* note *35*.

auditing, monitoring, poor maintenance and the lack of investments in power utilities leading to heavy indebtedness in this sector. India's current power infrastructure is already overburdened and crumbling under its current demands. To take into account future demand for power, given India's current growth trajectory, it would requires new and increased installed capacity for electricity generation to sustain it, and that means heavy investments need to be made to build these new capacities. Even in the service sector, especially IT, one of India's most prized industries, lack of reliable power creates disinterest amongst foreign companies eyeing the Indian market.[38]

To sum it up, every development problem of India is a problem of energy. The challenges are many. There needs to be an urgent re-thinking of Indian policy with regards to its approach on energy security and energy poverty. Therefore it is recommended that, firstly, the issue of energy poverty has to be included at policy level by India in their poverty reduction and development strategies.

Second, investment or financing in the power sector is inadequate, mostly done on a case to case or project to project basis, instead of having a holistic long term financing plan. Investment or financing strategy is *sine qua non* to any long term strategy in this area. In India, the power sector is also inefficient, being run virtually by State owned enterprises which incur heavy losses. Private players in this sector are few, like Tata Power and Reliance Energy, but have shown that they are far more efficient than their state run counterparts. The two companies now supply Delhi's power in partnership with state organisations,[39] and have claimed to have cut transmission losses by significant amounts.[40] Therefore there is a need for market incentives which gives impetus to public-private partnerships, entrepreneurship and innovation. In the context there is also an urgent need to create an environment for private cooperation and businesses, which is the key responsibility of governments, who would have to take cognizance of the issue of low demand in rural areas and price base for energy, and use regulatory mechanisms, subsidies, tax incentives etc., to provide an atmosphere to encourage private sector involvement.

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38. *Surpra* note 36.
39. Mark Gregory, *supra* note 35.
40. *Id.*

But increasing the existing power supply capacity, investing in infrastructure, promoting public-private partnerships and improving utilities alone will not solve India's energy poverty problems. These measures are necessary, but they have to be complemented by people centric and equitable development policies, which not only focus on India's economic rise, but also reduce the energy poverty gap between urban and rural India, and between its regions. Currently India's energy policy seems to be lacking a nexus with some of its development issues. The current Indian policy is biased towards powering the industrial, commercial and urban sectors, with little attention is paid to bring power to rural areas. To ensure holistic development, households in villages who do not have access to electricity would need to be connected.

IV.] ENERGY - ENVIRONMENTAL CHALLENGE

As discussed in the previous section, in order to fulfil its development goals and to realise its economic rise, there has to be an increase in energy consumption, and an increase in existing power supply capacity. But increasing energy consumption has its own problem – climate change. Climate change is the other end of the spectrum which requires urgent global intervention, as it transgresses national boundaries and affects humanity as a whole. It is maybe possible in the future to devise alternative strategies that use cleaner energy sources that mitigate climate change, but currently as already mentioned, the global economy is run on depleting reserves of polluting hydrocarbons.[41]

The case is only worse for India. India is presently the sixth largest and the second fastest contributor to global greenhouse gases.[42] This is largely because power generation in India is heavily dependent on thermal energy using coal and petroleum, both highly polluting sources of energy. Therefore, increasing consumption of energy and its power supply would require careful policy choices. In March 2007, India's installed capacity for electricity generation stood at 132,000 MW. The governments eleventh Five Year Plan set up an ambitious target to provide electricity to all by 2012. This would mean an increase of around a 100,000 MW in five years

41. Richard Heinberg, *supra* note 10, at 20.
42. Amitav Mallik *et al., supra* note 19, at 9.

between 2007 and 2010, to an estimated 225,000 MW.[43] Scenarios also predict that based on India's performance, by 2030 India's electricity generation has to increase to 400,000MW. Naturally, the government is way behind in realising this goal.[44]

In terms of a single energy source, many experts believe that coal will remain the dominant energy choice for India in the coming decades, due to being abundantly available and being relatively cheaper than oil and gas. This may have serious consequences for the environment, and might unsettle many internationally, as global energy demands shift from the OECD countries to developing countries like India and China, with coal as its fastest growing fuel source in the last decade.[45] Compounding this increase and the shift in demand for energy resources towards the east is the issue of energy intensity, or the amount of energy required to produce a unit of GDP. Developing countries like India are very energy intensive due to various existing inefficiencies. But the main reason for this energy intensive growth is the structural shift of millions moving from low energy intensive agricultural economy to a high energy intensive industrial and construction economy.[46] Growth in electricity and power demand in India has outpaced GDP growth, and that is why coal is the obvious choice. Therefore, in the coming decades, India will not only consume more energy, but the source of energy would itself be dirtier.[47] This poses a dilemma to Indian policy makers, who have to balance economic growth and plight of millions without electricity access on one hand, and issues relating to climate change and environmental sustainability on the other.

Somehow, the rule based system which evolved after World War II has so far reflected the interest of those who formulated these rules, or in other words, the western developed interests. Climate change negotiations are a prime example of the abovementioned claim. Today, it is in the interest of many that major emitting countries like India adopt future responsibilities through emission binding agreement in order to reduce

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43. Planning Commission, Government of India (2010).
44. Kumar Amitav Chaliha, *Indian Electricity: Miles to Go,* KWR Special Report, (August 20, 2007) available at http://www.kwrintl.com/library/2007/indianelectricity.htm (last visited September 7, 2010)
45. Christ of Ruhl, *Global Energy After the Crisis,* Foreign Affairs, (March/April 2010) at 64-67.
46. *Id.*
47. *Id.*

global greenhouse gases emissions. But development experts also point out that a binding emissions agreement would prove to be extremely detrimental not only to India's economic growth in the coming decades, but any progress made towards reducing energy poverty. This represents the conflict of interests. On one side, the rule based system and the developed nations prefer a binding environmental commitment which would address climate change, on the other, developing countries like India wish to progress with their aspirations of economic development, in a similar manner to their western counterparts.

One may argue clearly, that before developing countries like India are to undertake any future responsibilities regarding climate change, the developed and industrial countries would first need to address the historical responsibility which they have towards the environment.[48] Therefore, until these historical responsibilities towards the climate are met by developed countries, developing countries like India should not be forced to adopt any future responsibility arising out of a binding climate agreement.[49] This argument is further manifested by the fact that India's per capita emissions are far below most developed countries, and any legitimate future climate agreement should address this notion of equity.

On the other hand, climate change is a pressing issue which requires global cooperation, and hence we have seen a shift from the "polluter pays principle" to the adoption of "precautionary principle". It is just not environmentally sustainable for developing countries like India to adopt a similar trajectory of growth and emissions witnessed historically in developed countries. If India aspires to have a platform in international leadership, then it must make certain commitments to these rules. Many analysts believe that instead of a binding climate agreement, a historical responsibility by developed nations as well as a technological commitment towards developing countries would be more valuable in addressing and mitigating climate change, by making a quicker transition towards cleaner fuel technologies.

India would tremendously benefit from a binding technological commitment from the developed countries in pursuing its economic growth as well as taking a stand on climate change.

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48. Ligia Noronha, *supra* note 12, at 7.
49. *Id.*

V.] OBSERVATIONS

India may be on a quest for economic development and an aspirant for global reach, it cannot perceive its energy policies to be independent from its domestic socio-economic realities and environmental considerations. Although India lacks an overarching and holistic energy strategy, it needs to formulate policies which take into consideration its overall goals and how it would want to be perceived globally. In this quest for "enlightened self-interest," India needs to adopt suitable energy policies which would be "resource efficient and environmentally benign". These factors cannot be exclusive of the other.

First, one of the solutions available to balance energy security with conservation of the environment is to use energy sources more efficiently. In fact, in the Indian case it is quite the opposite. While it may not consume as much energy as Japan or China, India still remains more energy intensive than these countries. Therefore, in the Indian context it can be safely assumed that using energy more efficiently is a major necessity. In this regard, it is logical to assume that using energy more efficiently in the long run will promote energy savings in India, and thus inculcate a culture and ethos of conservation.

Second, there is an urgent need for fuel diversification in India to include renewable energies and technologies. The reason for this is twofold. One, it would enable India to reduce its import dependence on oil and gas. Two, renewable energies aided with new technologies can provide for a better alternative to fossil fuels, and provide cleaner energy. Currently, technological progress and scaleability issues are the main hindrances to moving towards cleaner fuels. India already possesses great potential in harnessing clean and renewable sources of energy.[50] Commitment from developed countries to transfer renewable energy technologies is one of the critical answers in this context.

Third, there needs to be reforms in the energy sector, although it is believed that it is going to be slow paced. These reforms call for a closer cooperation and participation between the public and the private sector as well as industry leaders and academics. This is most relevant in the power sector. The majority State owned power sector is beset with inefficiencies,

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50. *See*, Tanvi Madan, *India*, *in* The Brookings Foreign Policy Studies: Energy Security Series, (The Brookings Institute, 2006).

like subsidisation, and thus creates enormous fiscal burden. Inevitably, the private sector participation is a pragmatic solution as it is better equipped to ensure efficient power distribution. Especially in the case of rural electrification, prices need to be rationalised after careful planning and in consultation with various state organisations after considering local demand and income levels.

Rural areas in India pose another critical challenge. They are not only remote and distant from urban centres, but the population density in these areas is very low. Connecting these areas with limited energy demand to the electricity grid is not economical as that would result in higher manufacturing, production and transmission costs.[51] In this scenario as mentioned before, there is a need to diversify the energy portfolio to include renewable and modern fuels, where their potential could be harnessed. Distributed Power Generation (DPG), using renewable energy sources which are locally available is one off-grid solution. DPG technologies generate, transmit, supply, store and control electric power located near the retail or the consumer end of the grid.[52] This would also reduce the problem of spatial and regional inequalities in power consumption in India, as well as provide actual connection to more people living in rural areas, thereby reducing energy poverty. The only caveat in this proposition is that these projects need to find financing at least in the short to medium term, as the spending capacity for energy in these areas is very low. The move from being connected to the grid to off-grid solutions using renewable and modern fuels is not only environmentally sustainable, but it also empowers the rural areas to be independent (from the grid) for their limited energy needs and boosts local investments, entrepreneurship and employment.

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51. Amitav Mallik *et al., supra* note 19, at 9 – 14.
52. *Ibid*, 15.

BOOK – REVIEW

ENVIRONMENTAL LAW (Environment Protection, Sustainable Development and The Law) (Third Edition 2009) by Prof. (Dr.) Paramjit S. Jaswal, Vice-Chancellor, National Law University, Raipur (former) and presently Vice-Chancellor, Rajiv Gandhi National University of Law, Punjab and Prof. (Dr.) NishthaJaswal, Chairperson, Department of Laws, Panjab University, Chandigarh, published by Allahabad Law Agency, Faridabad (Haryana), Pp. xl+ 612, Price Rs. 300/-.

Vijender Kumar[*]

The book 'Environmental Law' authored by Dr. P.S. Jaswal and Dr. Nishtha Jaswal effectively seeks to provide a fundamental understanding of the substance and enforcement of environmental law, in all its aspects, in India. It contains thirteen chapters ranging from an Introduction to the topic, Common Law and Other Statutory Remedies, Constitutional Provisions and Environment Protection in India, Sustainable Development and the Law, Sustainable Development and Judiciary in India, Prevention and Control of Water Pollution, Prevention and Control of Air Pollution, Wildlife Protection and the Law, Forest Conservation and the Law, The Environment (Protection) Act 1986, Liability to Pay Compensation in Certain Cases on Principle of No Fault, Noise Pollution and its Control and the Law Relating to Management of Hazardous Wastes and Solid Wastes.

The authors start off with a basic and concise understanding of the problem, including the phenomena of greenhouse effect, ozone hole and Asian brown cloud which constitute the environmental problems at the international level. Here the authors also stress on the Indian scenario of the problem in short along with the constitutional commitments made toward environmental issues.

Before getting into the specific legislations relating to protecting and preserving the environment, the authors explain the remedies available

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under Common Law and general criminal and civil law in India for violations of the environment. These mainly constitute tortuous liability for public nuisance for having harmed the general public at large by acts which essentially pollute the environment.

This is followed by constitutional provisions regarding environment protection and India's obligation under the Constitution to respect and give effect to the international agreements on issues relating to environment. Under this Chapter the writ remedies enforced for violations of fundamental rights under the Indian Constitution, into which the right to live in a free and healthy environment has been read into, have also been discussed.

Further to this, the authors discuss the important point of sustainable development with respect to the environment. This is done first with a discussion on the international treaties, conferences and protocols on this issue and secondly with respect to the role of judiciary in giving face to sustainable development as a policy of development. The role and reports of the Inter-Governmental Panel on climate change have also been discussed with an outline of the principles of sustainable development.

The authors next analyze the problem of water pollution in India and the manner in which it is dealt with by the legal framework in the country. The Water (Prevention and Control of Pollution) Act 1974 has been explained in substantial detail. The authors further analyze the composition of the Central and the State Boards, their respective power and function and also the provisions in the Act relating to prevention and control of water pollution. Here the authors explain the various powers conferred upon the Central Board and the various State Boards to carry out measures for the prevention and control of water pollution. Further to this the authors discuss in detail the procedures under the Act and the penalties imposed under the same. The aspects of offences by Companies and Governmental Organizations as well as the cognizance of the same are also dealt with in an academic excellence.

In the next Chapter, the authors mainly deal with the problem of air pollution and the legal measures in place to check the same. Introducing the topic with a brief note on the sources and effects of air pollution, the authors proceed to a detailed explanation of the Air (Prevention and Control of Pollution) Act 1981. This includes the constitution and composition of the Central and State Boards for prevention and control of air pollution, their respective powers and functions. The powers given to the Boards for the prevention and control of air pollution under the Air

Act, e.g., the power to declare air pollution control area, power to take remedial measures etc. have also been discussed in great and systematic details. This is followed by a discussion in the procedures and penalties under the Air Act for offences committed by various entities.

Having discussed the aspects of air and water pollution, the authors move to the point of wildlife protection under the law. After briefly discussing the reasons to conserve wildlife, and the causes for the extinction of species, the authors track down the constitutional mandate to protect wildlife under the Directive Principles of State Policy and Fundamental Duties of every citizen. The authors further move on to the Wildlife (Protection) Act 1972; and discuss in detail the constitution and composition of National and State Boards and their respective standing committees under the Wildlife Act and their respective powers and functions. Further, the duties of these Boards to protect wildlife, which include protection of specified plants, declaration of protected areas and national parks etc. Also the points of constitution and powers of the Zoo Authority, the National Tiger Conservation Authority and the declaration of offences and punishments under the Wildlife Act have been explained in fair detail.

In the following Chapter, the authors discuss the topic of forest conservation and how it is effected by law and judicial decisions. Discussing the need to conserve forests, the causes and effects of deforestation, the authors move on to the constitutional mandate on forest conservation and specific legislations on the same, *viz.*, the Indian Forest Act 1927 and the Forest (Conservation) Act 1980. Further, a brief note is made on the judicial attitude towards forest conservation and especially the felling of trees and deforestation. The next Chapter deals with the Environment (Protection) Act 1986 and the National Environment Appellate Authority Act 1997. Under the former, the objects of the Act, the powers of the central government to protect and improve environment and give directions for the same; as well as the offences, offenders and the penalties under the Act have been discussed. Under the latter legislation, the composition of the Environment Appellate Authority, its jurisdiction, procedure and powers and rules made under it have been discussed.

The liability to pay compensation on the principle of 'no fault' in certain cases has been discussed in the next Chapter. Under this the Public Liability Insurance Act 1991; the Environment Relief Fund Scheme 2008 and the National Environment Tribunal Act 1995 have been discussed with explanation of their important provision.

The next two Chapters deal with noise pollution and disposal of hazardous wastes respectively. In the Chapter dealing with noise pollution, the authors focus on the method of measurement of noise and distinguishing it from sound, the causes and effects of noise pollution; the measures in place to control it which include its control under the law of torts, under criminal law and other legislations like the Police Act 1861, the Workmen Compensation Act 1923, the Factories Act 1948 and importantly the Motor Vehicles Act 1988 and the Environment (Protection) Act 1986 and the Rules framed under these legislations.

Under the topic of management of hazardous wastes, the provisions regarding management of hazardous wastes under the Environment (Protection) Act 1986; the Hazardous Wastes (Management, Handling and Trans boundary Movement) Rules 2008; the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989; the Ozone Depleting Substances (Regulation and Control) Rules 2000 and under five other sets of Rules have been discussed in detail. Apart from this the judicial attitude towards this issue has also been dealt with.

The approach of the authors here has been simple but by no means simplistic. Each Chapter starts with a general introduction to the concept, goes on to discuss the relevant provisions in the Constitution. Further to this, the discussion enters the realm of uncodified law like that of torts general legislations like the Indian Penal Code, the Code of Civil Procedure and the Code of Criminal Procedure and then moves on to specific legislations focused pointedly on the topic under discussion. Thus the approach followed seeks to cover the topic under every kind of legal provision in which it is dealt with, going from the general and guiding provisions of the Constitution to the provisions of the specific legislations.

Another very important and stand out aspect of this book is that every Chapter is replete with case laws of the Supreme Court of India and the High Courts. These case laws range from the landmark ones to those which are recent and have ruled on some of the recent laws relating to environment protection. This is seen especially in Chapters where a separate section has been included on the judicial approach to the topic under concern and also in the Chapters which deal with specific aspects like air, water and noise pollution, management of hazardous wastes etc.

This book undoubtedly qualifies as a complete textbook for the sake of a basic understanding of what environmental law is and what are the various aspects under its umbrella. The authors, in the preface, state that in the light of the importance and relevance of the subject, an attempt was

made to write this book on 'Environment Protection, Sustainable Development and the Law'. Whilst dealing in detail with the various facets of sustainable development both with respect to the legislative instruments for the same and the approach of the judiciary towards it, this attempt can be considered successful. This success is prominent by the fact that the Supreme Court referred to it in its decision in *In Re: Noise Pollution - Implementation of the Laws for restricting use of loudspeakers and high volume producing sound systems* [(2005) 5 SCC 733].

The reviewer while admiring the efforts of the authors in bringing out a scholastic work for the benefit of the students of law and researchers trusts that the book will fill the gaps. This book undoubtedly is a welcome addition for the students and researchers since it is the most comprehensive available research work on Environmental Law. Despite the shortcomings adverted to and notwithstanding many other little quibbles in respect of referencing, this is a book to dip into, splash about a bit in and return to again and again for vigorous intellectual exercise.

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