THE JUDICIAL SCRUTINY OF ENVIRONMENTAL RISK AND THE LEGISLATIVE SCHEME OF THE WATER ACT: A COMMENT

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This paper outlines the central role of risk management in the regulatory toolkit administering Indian environmental law. In particular, it examines the operationalization of risk management in the functioning of Water Act through the management of pollution standards, especially the extent to which standards management has informed adjudication by the higher judiciary and the National Green Tribunal. This examination of adjudication the cases is typed into cases that strictly deal with standards management, cases that deal with procedural objections to regulatory interventions to manage standards and public interest litigation cases. Though the overall number of cases are small, strict standards management cases constitute about a third of the overall number of cases arising out of the standards management provisions of the statute. Drawing on this distribution of cases the paper comments on the nature and limits of standards management as the framework of managing risk in the Water Act. Accordingly, this paper is also an introductory comment on the kind of enquiry that will make salient the framework of risk management that organizes the regulatory framework of the Water Act in particular and Indian environment law in general.

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I. INTRODUCTION

Over the last half century, India has developed a vast body of environmental laws covering concerns that relate to environmental justice, pollution control, land use regulation, natural resource regulation, impact assessment, energy regulation and a host of other related areas. This framework of regulation is by and large premised on strong public intervention, often by way of statute, to address pressing and emerging environmental threats and pivots on technical expert management of expected values and probable risks.[1] Consequently, no evaluation of Indian environment law can escape examination of the legislative and administrative schemes that assess and manage expected *risks* as also their ability to do so in a manner that is democratic and representative. Against this background, this paper presents risk management as key conceptual framework to understand Indian environment law and illustrates the significance of this framework through the example of the regulation pollution risks under the scheme of the Water Act.

The phrase risk management captures an important aspect of the conceptual foundation of modern environmental regulation and is premised on a simple idea. That is, probable future dangers or risks to the environment emanating from human activity can, and must be, subject to public regulation, even if it is not always possible on a preponderance of available evidence to establish and localize chains of causation to specific instances of risky behaviour. The simplest example of this form of state intervention is the almost intuitive belief that polluting activity, for instance the operation of a coal fired power plant, must be subjected to some regulatory standards even though it cannot be definitively established that any one such industry *causes* damage to human health. In this respect, risk based approaches to environmental regulation overcome limitations in earlier forms of environmental regulation like tort law, which requires higher evidentiary standards like the preponderance of probability to be established between environmentally harmful human activity and a specific environmental harm.[2]

The limits of tort actions as a form of environment regulation are particularly well illustrated in litigation related to climate change in countries like the United States. Besides the obvious limitation of case by case prosecution in courts of law, the further difficulty of establishing that even large polluters like multinational oil companies *cause* climatic changes, has been a reason why it has not

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1 From the enactment of the Water Act in 1974, there have been many subsequent legislative interventions in the field of environment regulation, all dealing with risky activity. A classic instance of this form of intervention that has hogged much public limelight is the Environment Impact Assessment Regulations under the Environment Protection Act, which deal with the assessment and prevention of risks associated with specified risky activities. In his critical sociology of risk, Ulrich Beck characterizes this feature of contemporary regulation as the reflexive property of modern industrial society. *See* Ulrich Beck, Risk Society: Towards a New Modernity (1st ed. 1992). *See also* Deborah Lupton, Risk (1999).

2 *See* Michael Duffy, *Climate Change Causation: Harmonizing Tort Law and Scientific Probability*, 28 Temple J. Sci. Tech. & Env't L. 185–242 (2009).

been easy to successfully prosecute them in tort law.[3] Of course, the absence of localized causal links tying specific actors to specific climate change consequences does not mean that there is no evidence of the causal links between human actions and increased planetary warming. Quite to the contrary, systematically collected scientific data from the International Panel on Climate Change has clearly established that human activity has contributed to causing global warming and consequently, to climate change.[4] In turn, this has been the basis for efforts to secure a viable international regulatory regime that intervenes to secure binding national commitments for the larger global and public interest. As things stand, this form of state led intervention in the public interest is the most effective available response to risks whose causal chains are not easily established or localized.

Therefore, such state action, be it to address global problems like climate change or the more localized problems addressed by Indian environmental law, is fashioned by models of risk and probability[5] that are determined by some form of scientific investigation.[6] Recognizing the significance of techno-scientific judgments to much contemporary environment regulation, this paper addresses risk management approaches that draw on such scientific analyses in domestic Indian law. In particular, it emphasizes the broad orientations of Indian judicial responses to regulate risks associated with water pollution as it is statutorily specified. The emphasis on judicial responses to risk is particularly important as Indian courts have become significant actors in Indian environmental governance,[7] and have, especially through their public interest and rights based adjudication, extended their regulatory power well beyond existing legislative frameworks.

By training the spotlight on risks associated with water pollution, this paper is organized in the following manner. First, it explores ways of studying risk against the background of strong judicial intervention in environmental matters. Second, it outlines the specific statutory form that risk policy takes in the regulation of water pollution. Third, it analyses patterns in the judicial management of environmental risk even as it attempts some preliminary evaluation of the information

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3 For an account of causation as a problem in tort law, the limits of tort actions against environmental harm and the attempts to get part them, *see* Michael Duffy, *Climate Change Causation: Harmonizing Tort Law and Scientific Probability*, 28 TEMP. J. SCI. TECH. & ENV'T L. 185–242, 201–15 (2009).

4 *Id.* at 189–93.

5 This is also ideally supplemented by public consultations, which taken into account human apprehensions about ecologically harmful behaviour. A good example in Indian environmental law is the public hearing process that is tied to impact assessments of projects.

6 It is important here to bear in mind Fisher's caution of not being too dogmatic about the assessment or the science of risk and its politics, which she terms the 'management of risk'. Elizabeth Fisher, *Framing Risk Regulation: A Critical Reflection Transnational Risks and Multilevel Regulation: A Cross-Comparative Perspective*, 4 EUR. J. RISK REG. 125–132 (2013).

7 For example, *see* L. Rajamani, *Public Interest Environmental Litigation in India: Exploring Issues of Access, Participation, Equity, Effectiveness and Sustainability*, 19 J. ENVTL. LAW 293–321 (2007).

recovered from these patterns. Lastly, it points to limitations in the Indian risk management framework in relation to water pollution, which are largely centered on cost effectiveness and feasibility, with lesser focus on broader concerns like impact on human health and overall ecological well being.

II. APPROACHING RISK IN INDIAN ENVIRONMENTAL LAW

As an important and perhaps even the most significant actor in Indian environmental regulation, it would seem that the Indian judiciary is an obvious site to initiate any study on Indian environment law. It would seem particularly apt to understand the regulation of risk, as courts have carved out an important role for themselves through the adoption of principles like precaution in their fundamental rights adjudication.

The classic instance of precaution in Indian environmental adjudication is considered to be the Supreme Court's decision in the *Vellore Citizens' Welfare Forum v. Union of India* ('the *Vellore* case').[8] In this case, dealing with ground and river water pollution from the leather industry in Vellore, the court asserted that governments must anticipate and prevent causes of environmental degradation, respond to threats such that that uncertainty of science is not a reason to postpone measures to prevent ecological damage and, has shifted the burden of proof to demonstrate ecological harm onto those carrying out harmful activity.[9] Of course, this principle was asserted against the background of a statutory framework on water pollution that we will presently discuss. But regardless of whether this assertion of the precautionary principle makes explicit what is already contained in that statutory policy or whether it bolsters the statute by asserting a stronger standard, the emphasis that the precautionary principle places on responding to the *probability* of harm suggests that the Indian judiciary places considerable significance on regulation founded on expected future risks.

However, in a critique of the Supreme Court's working of the precautionary principle as identified above, the environment law scholar Lavanya Rajamani, notes that the Court very seldom actually deploys precaution as a principle in its reasoning while responding to potentially risky human activity. To argue her case, Rajamani draws on the court's own characterization of precautionary risk management to identify precaution as a very particularized approach to risk, where courts and regulators are called to intervene and regulate ecological risks even, or especially, when faced with uncertainty or insufficient scientific evidence.[10] This extremely risk averse management of ecological harm permitting

[8] *Vellore Citizens' Welfare Forum* v. *Union of India*, (1996) 5 SCC 647.

[9] *Vellore Citizens' Welfare Forum* v. *Union of India*, (1996) 5 SCC 647, paras 12, 13.

[10] Lavanya Rajamani, *The Precautionary Principle in the Indian Courts: The Vanishing Line Between Rhetoric And Law*, *in* Analytical Lexicon of Principles and Rules of Indian Environmental Law (Shibani Ghosh ed., forthcoming).

intervention even in the face of mere uncertainty is intended to address peculiarly modern industrial dangers emanating from phenomena like genetically modified organisms, electromagnetic fields, nanotechnology and so on, where chains of causation are very diffused though the dangers could be potentially far reaching.[11]

Within this very tightly demarcated analytical framework, Rajamani distinguishes between precautionary risks and preventive risks, where the latter category of risks is marked by a greater degree of scientific certainty on what harms and consequences are likely as a result of human activity. And, having identified precaution with uncertainty of expected risks, Rajamani finds that the Indian judiciary very seldom deploys precaution, choosing prevention instead when responding to potentially risky human activity. Thus, to take the example of *Vellore*, where pollution had already occurred or where the pollution loads were more or less known, the court was only making preventive judgements as there was relatively little uncertainty regarding which a precautionary judgment had to be exercised.

Rajamani might well be right about the manner in which the precautionary principle is deployed by courts. However, from the perspective of risk management the difference between prevention and precaution might only be semantic as they could be viewed as different points on a continuum of risk. And, deciding what standard of risk management to apply across a range of polluting activities or indeed the very merit of precautionary approaches as a regulatory response is a matter for separate study.[12] However, if risk management is presumed like it is in the *Vellore* case then, the case demonstrates the extent to which the Indian judiciary has drawn risk management to the center stage of environmental regulation. And, all these cases also demand that state institutions are able to process and work with technical and scientific information to formulate regulatory responses.

The Indian judiciary has often been a relevant player in these decisions but to organize any discussion on risk regulation solely around courts and adjudication would be to miss a considerable part of the institutional story that is almost always elaborated in legislative and administrative policy. Judicial decisions often only draw on these policy frameworks and, even when they go beyond them in the name of fundamental rights, it is almost always to fill in the gaps or to transcend limitations that they elaborate more expansive principles like that of precaution. It is against this background that it is important to situate environmental principles deployed by courts against the backdrop of statutory policy frameworks that inflect the manner in which risk is understood and managed.

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[11] *Id.*

[12] For an example of this kind of study See CASS R. SUNSTEIN, RISK AND REASON: SAFETY, LAW, AND THE ENVIRONMENT (2002).

As Indian environment law has numerous legislative and administrative frameworks that deal with the management of various kinds of risk, this paper narrows the scope of its study to judicial management of risk to the Water (Prevention and Control of Pollution) Act, 1974 ('the Water Act'). This statute is arguably the earliest elaboration of Indian legislative policies to address ecological risks and is also the model that informs the later statute, the Air (Prevention and Control of Pollution) Act, 1981 ('the Air Act) which regulates air pollution. In addition, as the principal policy framework to address evocative and pressing challenges like that of the pollution of iconic rivers like the Ganga and the Yamuna, getting a measure of judicial response to the frameworks of risk management in this statute will allow for a fine-grained understanding of the manner in which Indian courts draw on it to steward the management of risk.

Having foregrounded the importance of the policy context to define risk management, this paper examines the operation of that policy as it is refracted through judicial decisions on water pollution. Of course, it could be argued that such a study is best conducted by examining the working of executive authorities and not their oversight by the judiciary. However, this route is adopted because detailed empirical studies of the administration are extremely difficult to come by.[13] And, as previously mentioned, the Indian judiciary has played an extremely important role in shaping environmental governance, hence its use of risk as specified in the Water Act is a useful benchmark to examine the degree to which courts have both deployed and moved beyond the statutorily specified policy to manage risks related to water pollution.[14] However, to get this enquiry off the ground, it is important to outline the legislative policy instructions contained in the Water Act which presumably shapes and structures judicial intervention.

III. THE OUTLINES OF LEGISLATIVE POLICY: THE STRUCTURE OF THE WATER ACT AND RELATED STATUTES

The Water Act, and even the Air Act which closely resembles it, emerged from the decade following the United Nations Conference on the Human Environment held in Stockholm in 1972.[15] The period witnessed increasing global recognition of the alarming loss and degradation of ecological resources,

[13] For some notable exceptions, *see* Geetanjoy Sahu, Environmental Regulatory Authorities in India: An Assessment of State Pollution Control Boards (2013); Chandra Bhushan, Nivit Yadav & Anil Kumar Roy, *TURNAROUND: Reform Agenda for India's Environmental Regulators*, ResearchGate, https://www.researchgate.net/publication/310774404_TURNAROUND_Reform_Agenda_for_India's_Environmental_Regulators (last visited Feb. 26, 2017).

[14] The right to clean environment has been declared to be part of the life to life as contained in Art 21 of the Constitution in cases like *Subhash Kumar* v. *State of Bihar*, (1991) 1 SCC 598; *M.C. Mehta* v. *Union of India*, (1992) 3 SCC 256, para 2; *Virender Gaur* v. *State of Haryana*, (1995) 2 SCC 577, para 7.

[15] The Air (Prevention and Control of Pollution) Act, No. 14 of 1981, preamble.

and both these statutes were products of that time and its struggle with these and related environmental concerns.[16] But more importantly for the present study, the Water Act also elaborates a legislative policy that was premised on risk management. It is this framework of risk management that is of concern for the present purpose.

Structurally the Water Act, like the Air Act, deals with the risks stemming from the pollution of surface water through the grant of consents or licences to point sources or outlets of pollution or effluents.[17] These consents or licences are tied to specified permissible standards of emission,[18] and the standards in turn are determined and policed by 'Pollution Control Boards' established both at the state and the central levels of India's federal government.[19] The regulatory approach specified in these statutes therefore turns on ensuring that the risk associated with licensed activities are held to the standards specified by the boards. Standards here refer to indexes of risk as determined by the boards, presumably on the basis of scientific studies that ascertain the impact of pollution on human health and other forms of life that a water body sustains.

When the standards are violated or when boards anticipate that they might be violated, they are permitted to go a court to secure an order of restraint.[20] In 1988, both the Water Act and the Air Act were amended to allow the board the additional power to pass directions leading to closure, stoppage of essential services or related regulations or prohibitions to ensure that the provisions of the Acts were not violated.[21] All failures to comply with standards established under the Acts or with directions issued by the board would also invite criminal prosecution.[22] However, it is important to mention that the statutes do not permit the boards to levy fines as part of the regulatory (as opposed to the adjudicatory) process when dealing with violators.[23]

Therefore, at the heart of the regulatory design of managing risk in this statute is the demand that the pollution control boards enforce pollution standards by securing orders of restraint from courts, by initiating criminal proceedings or, by themselves passing directions to close or suspend essential services like water

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16 For a typical statement of the troubles of the time, *see* RACHEL CARSON, LINDA LEAR & EDWARD O. WILSON, SILENT SPRING (Anniversary edition ed. 2002); INDIRA GANDHI, OF MAN AND HIS ENVIRONMENT (2008).

17 The Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 25.

18 The Water Act, § 24.

19 The Water Act, §§ 16(2), 17(2).

20 The Water Act, § 33.

21 The Water Act, § 33A.

22 The Water Act, Chapter VII.

23 *See* SHIBANI GHOSH, REFORMING THE LIABILITY REGIME FOR AIR POLLUTION IN INDIA (2015). In this respect, the Water Act does not give the regulator what administrative lawyers call the full plurality of regulatory options to fashion responsive regulatory schemes to address the problem of compliance. CAROL HARLOW & RICHARD RAWLINGS, LAW AND ADMINISTRATION, 233–35 (3rd ed. 2009).

and electricity. It is important to note once again that the boards are not empowered to levy fines for violation of the standards set by the Act. Thus, though the statute envisions regulatory intervention by the boards by way of directions that could lead to closure or suspension of licensed activities,[24] statutory compliance with standards is primarily envisioned by way of *judicial action*.[25] Consequently, it is the judicial management and enforcement of standards within this statutory framework that is the focus of this enquiry.

In particular, this paper trains its spotlight on adjudication of 3 kinds of decisions that form the catchment of standards or risk management cases under the Water Act. These include - first, challenges to decisions and directions of the boards regarding licence or consent violations; second, cases brought to courts to prevent existing or possible breaches of standards; and third, criminal prosecution where standards have been violated or where directions of the Boards have been disregarded.

In all the kinds of cases specified above, where the board exercises their own regulatory powers to pass directions, an appellate authority hears appeals from decisions made by the boards and post 2010, the National Green Tribunal (NGT) hears further appeals.[26] Where necessary, the Indian Supreme Court is the final court of appeal. In criminal cases, or where the board seeks to abate risk by way of court orders, the cases travel through appropriate channels of the judicial process, going all the way through the appropriate lower courts, the high courts and eventually the Supreme Court. Across these cases, by examining those decided by the High Courts, the NGT and the Supreme Court, this paper examines the adjudication and review of risk that the Indian higher judiciary exercises when confronted with instances of the violation of pollutions standards as statutorily specified.

It must be mentioned that managing risks by policing standards also requires a robust and fair procedural system to grant licences, a reliable system to collect and test samples, a credible archive of information on the state of the relevant ecological bodies, and so on. However, this paper assumes these aspects of regulatory functioning as part of a necessary background to examine the judicial approach to enforce legislative instructions to manage risks as specified by the standards attached to licensed activities under these Acts.[27]

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[24] This not an option that is frequently exercised as closure of polluting activity is an extreme response that Boards are reluctant to use. Ghosh, *supra* note 23.

[25] This is a regulatory model that traces to the US Clean Air Act and followed by many European countries as well. *See* Neil Gunningham, *Environment Law, Regulation and Governance: Shifting Architectures*, 21 J. Envtl. L. 179–212 (2009).

[26] The Water Act, §§ 28, 29, 33B.

[27] Perhaps this is an unreasonable assumption. *See* M. Rajshekhar, *Why India's Numbers on Air Quality can't be Trusted*, The Economic Times, http://economictimes.indiatimes.com/industry/auto/news/industry/why-indias-numbers-on-air-quality-cant-be-trusted/articleshow/44808946.cms (last visited Mar. 2, 2017).

At this juncture, it is important to return the judiciary and its role as an environmental regulator, especially through its incorporation of fundamental rights into environmental governance through its public interest adjudication. Judicial intervention through public interest litigation has, since 1980s, tied the efficacy of statutory policy in the Air and Water Acts along with the Environment Protection Act of 1986, as an important facet of the constitutionally guaranteed right to life.[28] In doing so, courts have supplemented or bolstered the regimes of risk in these statutes by reading precaution, public trust, polluter pays, sustainable development, and so on into these statutes and collectively understood the statutes and principles as embodying the values protected by the fundamental right to life.[29]

The latter statute, the Environment Protection Act, was enacted to deal with the aftermath of the disastrous gas leak at Bhopal,[30] and was structurally organized to empower the union government to constitute specific regulatory regimes and authorities to address specific environmental problems. Some examples of regulatory frameworks constituted under this statute include those to regulate solid waste, hazardous chemicals, electronic waste, noise pollution, air pollution, environment impact assessment and so on.[31] For the purposes of this paper, it is sufficient to note that the Supreme Court has read the policy framework in this statute and the Water Act along with principles like that of precaution to elaborate the content of the fundamental right to life.

Judicial intervention founded in the fundamental right to life has consequently permitted the higher judiciary and especially the Supreme Court to emerge as an agent of environmental governance by crafting activist remedies to implement its expanded reading of both the fundamental right to life as well as the policy contained in the statute. These activist interventions have been facilitated by the emergence of juristic techniques associated with public interest litigation. These include broadening the rules of standing, taking evidence by affidavits, constituting committees to lead evidence,[32] and even by actively participating in environmental policy-making in areas such as fuel policy, solid waste and the health of rivers. In doing so, the higher judiciary, especially the Supreme Court, has actively overseen cases, sometimes over decades, to enforce the implementation of its directions.[33] Thus, it is important to note that these rights related cases often tie into the risk management scheme of the Water Act, and a scrutiny of the courts' regulation of risk must include them as well.

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[28] For example, *see* Lavanya Rajamani, *The Right to Environmental Protection in India: Many a Slip between the Cup and the Lip?*, 16 R. EUR. COMMUNITY & INT'L ENVTL. L. 274–286 (2007).

[29] *Id.*

[30] The Environment (Protection) Act, No. 29 of 1986, Statement of Objects And Reasons.

[31] Environment (Protection) Act, Schedules I-IV.

[32] For instance, *see* Mathew John, *Interpreting Narmada Judgment*, 36 ECON. & POL. WKLY. 3030–3034 (2001).

[33] *See* Rajamani, *supra* note 7.

Lastly and most recently, the enactment of the NGT also generates another route of cases concerning water pollution. The NGT Act deals with civil cases and the NGT statute permits the higher judiciary to transfer civil environment cases to this forum.[34] Further the statute also grants original jurisdiction to the NGT to deal with 'substantial questions dealing with the environment' having a bearing on issues arising from the implementation of the Air, Water and Environment Protection Acts besides also being the appellate adjudicatory body dealing with questions arising under these statutes.[35]

Thus, an examination of the risk response of Indian courts in relation to Water Act is tied to the management of standards under that Act, as much as it is to its intersection with the Environment Protection Act, the National Green Tribunal Act, as well as the PIL jurisdiction of India's higher judiciary. The paper must now turn to this treatment of risk and the patterns of typologies that emerge from them to get a sense of the management of water pollution risks by the Indian higher judiciary.

IV. PATTERNS IN THE ADJUDICATION OF RISK IN WATER ACT CASES

The policy framework for the management of risks from water pollution, as already mentioned, primarily turns on the enforcement of standards for licensed activities. This includes formulation of standards and ensuring adherence of licensed actors to these standards by way of regulatory directives, court orders and penal action. Further, the responsibility for both standard setting as well as standard enforcement is placed on the Pollution Control Boards. Therefore, it is through the examination of disputes about the execution of these regulatory functions that the different types of judicial responses to managing standards must emerge. In examining these cases it is important to clarify that an assessment of the judiciary's response to risk would not reveal very much about the ecological outcomes and consequences of their decisions.[36] As important as it is, an outcome-based analysis is entirely beyond the scope of this paper. Instead, an analysis of judicial approach to risk mitigation and management will primarily turn on the modes through which the judiciary statutorily defends standards as mandated by the Water Act.

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[34] For example, the Supreme Court recently transferred the high profile Ganga pollution case to the NGT- *SC Transfers a PIL of 1985 on Cleaning of River Ganga to NGT*, The Indian Express (2017), http://indianexpress.com/article/india/sc-transfers-a-pil-of-1985-on-cleaning-of-river-ganga-to-ngt-4489911/ (last visited Feb. 27, 2017).

[35] National Green Tribunal Act, No. 19 of 2010, § 14, http://lawmin.nic.in/ld/P-ACT/2010/The%20National%20Green%20Tribunal%20Act,%202010.pdf.

[36] For an example of outcome based analysis of Indian environmental decisions, *see* Geetanjoy Sahu, *Implementation of Environmental Judgments in Context: A Comparative Analysis of Dahanu Thermal Power Plant Pollution Case in Maharashtra and Vellore Leather Industrial Pollution Case in Tamil Nadu*, 6 L, Env't Dev. J. 335 (2010).

Examining the adjudication of standards management under the Water Act entails scrutiny of cases decided under the appropriate sections of the statutes as previously outlined.[37] Accordingly, from the period of its inception to early 2017, this paper identified and retrieved eighty-three standard management cases under the Water Act decided by the Supreme Court, High Courts and the NGT. These included forty-two cases from the High Courts, twelve cases from the Supreme Court and twenty-nine cases from the NGT that had a bearing on the process of standards management. These cases involved a direction demanding that a polluter apply a standard, a decision that a party was not polluting beyond the prescribed standard, a demand that a technology be introduced to achieve a standard, a decision that standards should be maintained to protect a water body, and sometimes where the decision addresses a preliminary objection to the application of a standard.

If this methodology of retrieving standards management cases under the Water Act is adequate to decipher judicial approaches to the management of risk, then preliminary findings allow analytical division of the retrieved cases into three discernable categories. The first of these involves cases where there is a straightforward application of standards by the court, where it finds that a standard has not been breached or issues a direction to an identifiable polluter after it is established that the relevant standard has been breached.[38] The second type of case involves a judicial response to a more complex ecological problem involving multiple polluters and the ecosystems of whole rivers and water bodies, where standards are maintained by a governance level intervention by the judiciary mostly under its public interest jurisdiction.[39] The last set of cases addresses instances that turn on various objections to the regulatory process of defending standards.

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[37] To do so, the paper retrieved cases from the Manupatra database under all the sections in the Water Act dealing with standards and their enforcement. As already mentioned, these included cases under the provisions that demand that the Boards establish standards, that call on the board to license activities to manage standards, that prohibit violation of standards, that permit the Boards to pass directions against polluting industries, provisions that permit Boards to approach court to restrain pollution, and the provisions that allow for criminal prosecution of polluting activity and non-conformity to regulatory directions. Across these sections, this paper has drawn upon cases that involved a standards management response from the higher judiciary as well as the NGT. Further, since the higher judiciary has also intervened in air and water pollution problems through its rights based jurisprudence, the paper also retrieved standards management cases by examining cases thrown up through the search string 'standards and water act'. In addition, the paper retrieved standard management cases in relation to water that could have been adjudicated under the Environment (Protection) Act by retrieving cases with the search string 'environment protection act and water act and standards'.

[38] For instance, *see M.C. Rao* v. *State Pollution Control Board*, (2013) 1 OLR 148, Orissa HC, 3 judge bench; *Narula Dyeing & Printing Works* v. *Union of India*, 1995 SCC Online Guj 4 : AIR 1995 Guj 185, Guj HC, Single judge; *C. Murugan* v. *Karnataka State Pollution Control Board*, 2015 SCC Online NGT 8, 2 judge bench, *South; Shailesh Singh* v. *Bhushan Steel & Stripes Ltd.*, 2016 SCC Online NGT 3377 : MANU/GT/0201/2015, 4 judge bench, Principal.

[39] For instance, *see Krishan Kant Singh* v. *National Ganga River Basin Authority*, 2014 SCC Online NGT 1161 : MANU/GT/0130/2014, 4 judges, Principal; Indian Council for *Enviro-Legal Action* v. *Union of India*, (1996) 3 SCC 212; *Centre for Urban and Rural Environment (CURE)* v. *Ministry of Environment and Forests*, (2004) 7 ALT 411, 2 judge bench.

These could range from the improper collection of samples, the violation of principles of natural justice in the regulatory process, the irrationality of an established standard, the absence of the requirement to abide by the standards in a particular case and so on.[40] In many of the cases in this latter group, there could be a *prima facie* violation of standards that are sidelined by these preliminary objections, and are therefore not subjected to judicial enquiry. However, in some cases, courts could decide against these objections and direct that the regulatory process against a party must be taken to its logical conclusion.

Of these three types of cases, it is interesting to note that the first and the third types constitute an overwhelming majority of the eighty-three cases retrieved by the methodology adopted by this study.[41] That is, cases dealing with a simple direction to abide by a standard, and those addressing objections to the application of the regulatory process enforcing standards, form the overwhelming majority of the cases in this study.[42] In case of High Courts, over half the cases fell in the third category, dealing with objections to the application of the regulatory process of defending standards. Similarly, in the case of the NGT, most of the cases fell in the first category, dealing with a straightforward application of standards by the tribunal involving a clear direction to an identifiable polluter to attain a specified standard or by returning a finding that an alleged polluter was not exceeding the specified standards. In both the High Courts and the NGT, less than one-fifth of the cases involved governance styled responses discussing standards in connection to a complex ecological problem. On the other hand, in the case of the Supreme Court, the results differed significantly with a majority of the cases dealing with complex ecological problems and the courts intervening primarily as governance actors mostly by way of PIL.[43]

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[40] For instance, *see Aggrawal Textiles Industries* v. *State*, 1981 WLN (UC) 141, Single Judge; *DCM Shriram Industries Ltd.* v. *State of U.P.*, 2015 SCC OnLine All 5424 : (2016) 8 ADJ 485, 2 judge bench; *Wimco Co. Ltd.* v. *U.P. Pollution Control Board*, 1990 SCC OnLine All 228 : (1990) 16 ALR 648, Single Judge; *Nicosulf Industries and Exports (P) Ltd.* v. *State of Gujarat*, (2002) 2 RCR (Cri) 731, Single judge; *M/s Bhikhari Lal Jai Prakash Dairy* v. *U.P. Pollution Control Board*, 1999 SCC OnLine All 826 : (2000) 38 ALR 329.

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Forum	Standard Application Cases	PIL/Complex Ecological Problem cases	Preliminary Objection Cases
High Court	13	7	22
Supreme Court	3	7	2
National Green Tribunal	22	3	4

[42] *Id*.

[43] However, it is important to recognize here that Public Interest Litigation (PIL) is not as statistically significant as news reports would have one believe. According to a very important study on the Supreme Court, PIL constitutes only about 1% of the Supreme Court's docket load. *See* Nick Robinson, *A Quantitative Analysis of the Indian Supreme Court's Workload*, 10 J. Empirical Legal Stud. 570–601, 599–600 (2013).

It is equally significantly to note that the eighty-three standards related cases retrieved by this study cover the entire life span of the statute. This number includes cases decided by the Supreme Court, all the High Courts, and the NGT, which amounts to about 2 cases a year over the last forty-three years. The constitution of the NGT has perhaps facilitated a spike in the number of cases as it has contributed to a little more than a third of the total number of cases retrieved since its inception in 2010. Another third of the total number of cases involve a range of miscellaneous objections to the applicability of standards in a particular case, like challenges to the rationality of standards, challenges relating to the legal necessity of maintaining standards in particular instances, or procedural violations in the regulatory process that make penal prosecution impossible, despite the possibility of *prima facie* violation of standards. Removing the latter cases from the total tally would pull down the numbers of decisions involving standards application to just a little over 1 case a year. Thus, though ensuring standards forms a central part of the regulatory policy of the Water Act, it is significant to note that straightforward standards enforcement cases do not constitute the majority.

The seemingly low number of cases enforcing standards is indeed significant though it could turn on a whole range of problems like the cost of litigation, cases pending or being resolved at earlier stages of regulation or in lower courts, quality of data that informs risk regulation, capacities of the regulators to make successful prosecutions, and so on. The alarming state of water resources in the India[44] would make this an important problem to diagnose, but this is a task for a separate occasion. The issue of low levels of adjudication might perhaps be a clear vindication of those who believe that the real battle for a clean environment, water included, rests not in judicial contest but in ensuring that administrative and regulatory processes are taken more seriously and made more effective.[45] However, even if one were to accept that the judiciary is not the domain where the primary battle against serious environmental risks is to be fought, the task of explaining and comprehending the manner in which the judiciary has handled standards enforcement under the Water Act is still left open.

V. COMPREHENDING RISK ADJUDICATION IN THE WATER ACT: SOME PRELIMINARY COMMENTS

An important factor that has driven this study has been the very important role that that the higher judiciary and especially the Supreme Court has played in shaping the regulation of environmental regulation generally and environmental risk in particular. Much of this intervention as we have already noted has been facilitated by the determining role played by PIL as a form of adjudication.

[44] SUNITA NARAIN, GANGA: THE RIVER ITS POLLUTION AND WHAT WE CAN DO TO CLEAN IT (2014).

[45] *See* CENTER FOR POLICY RESEARCH-NAMATI ENVIRONMENT JUSTICE PROGRAM, HOW EFFECTIVE ARE ENVIRONMENTAL REGULATIONS TO ADDRESS IMPACTS OF INDUSTRIAL AND INFRASTRUCTURE PROJECTS IN INDIA. (2016).

However, as the present study seems to suggest, PIL has only had a marginal presence in the overall number of cases addressing standards management under the Water Act.[46] In fact, the examination of judicial decisions on risk under the Water Act cases in this paper reveals that cases have by and large been argued within the normal bounds of statutory policy of the Water Act. This is not unexpected or surprising as the Water Act is the principal statutory instrument addressing the issue of water pollution and does so primarily by way of standards management. And further, the introduction of the NGT as a dedicated tribunal with technical expertise seems only to have bolstered the regulatory efforts to defend standards.

Thus, a detailed study of these judicial trends in risk management under the Water Act would demand closer scrutiny of particular cases and especially those standards management cases that either facilitate or impede standards management.[47] However, as an introductory outline presenting possible forms of judicial management of risk or standards in the Water Act, this paper leaves open these enquiries for future study. On the other hand, the present section will only examine the outlier PIL cases and their significance against the background of risk management specified in the Water Act. Accordingly, this section examines the significance of cases where courts are not strictly regulating standards violations of point sources as provided for in the Water Act but crafting more holistic ecosystem response to maintain standards by drawing on fundamental rights through the modality of PIL.

Of course, considering PIL as a systematically organized and holistic ecosystem approach to risk and standards management might amount to reading too much into specific cases. As some very trenchant criticism of PIL has pointed out, it is a mode of adjudication that has permitted the emergence of a court unrestrained by legal norm or due process of law, often at great cost to poorer and disadvantaged litigants.[48] Some studies go so far as to suggest that they make for poorer environmental processes and outcomes as well.[49] The resolution to this criticism is often framed in the language of the rule of law, judicial restraint, and the appropriate separation of governmental functions.[50] This is obviously a significant criticism of PIL, but as Lord Carnwath argues, common law courts have, since the times of the great stink in London, intervened in complex ecological problems with expansive orders protecting individual rights.[51] While he accepts

[46] Of course, it could be said that PIL cases contain numerous orders spread across many years when courts manage that case. Even so, to the extent that various courts orders are reported, they have been scrutinized by this study.

[47] The CPR-Namati Report documents is an example of an effort of this kind at the level of regulatory process; Center for Policy Research-Namati Environment Justice Program, *supra* note 45.

[48] For one of the most recent and elaborately outlined version of this argument, *see* Anuj Bhuwania, Courting the People: Public Interest Litigation in Post-Emergency India (2017).

[49] Rajamani, *supra* note 7. However, for a contrary view *see* Sahu, *supra* note 36.

[50] Bhuwania, *supra* note 48; Rajamani, *supra* note 7.

[51] In this case, it was through nuisance actions. *See* Lord Carnwath, *Judges and the Common Laws of the Environment—At Home and Abroad*, 26 J. Envtl. L. 177–187 (2014).

that the defense of rights in environment with broad policy directions need not sit easily with the effectiveness of their intervention, he also notes that the power to intervene was never in doubt.[52] In the Indian case, as already mentioned, the Constitution grants unambiguous powers to intervene in defense of rights, and this is the basis of the public interest actions to address environmental harms. Thus, though it is possible to criticize particular aspects of the exercise of public interest jurisdiction, it is difficult to argue that it is *per se* not a legitimate exercise of judicial power. Therefore, against the background of the present study where most of the retrieved standard management cases under Water Act cases have been decided within the framework of legislative policy, an interesting question to answer might be the functional limitations in the structure of the Water Act that permit or even require courts to manage standards by taking on governance roles to remedy complex ecological problems. That is, how is it possible to understand governance responses to water pollution as part of an effort to manage standards?

One answer to this question has been that the court is merely filling in or remedying the poor quality of regulation and leadership displayed by the Boards, which are charged with the task of regulating water pollution and managing standards under the Act.[53] The importance of efficient, reliable, impartial and credible regulation can hardly be gainsaid.[54] Important as it is, this manner of examining the water pollution problem is a problem arising from within the policy framework in which the Boards operate and there would be no need for courts to draw on their PIL powers to deal the problem at this level. They could very well deal with these problems through directions to comply with the legislative policy specified in the Water Act. However, as PIL courts on occasion go well beyond statutory policy as for example in the establishment of the precautionary principle in the *Vellore* case, it is useful to examine the limitations in the model of risk or standards management in the Water Act that courts might either consciously or unconsciously be attempting to surpass to resolve such cases.

As already noted, the legislative scheme of the Water Act is designed to deal with pollution by targeting individual point sources of pollution by granting them licences to operate within the framework of standards. However, as a licensing system that focuses on point sources, it is often concerned only with what is most cost effective or feasible for a particular kind of point source rather than being

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[52] *Id*.

[53] *See* Sahu, *supra* note 36.

[54] The courts have long been aware of this problem. They have attempted to modernize the functioning of the Boards in *Rajendra Singh Bhandari* v. *State of Uttarakhand*, MANU/GT/0111/2016. Courts have passed orders to get past poor information provided by the boards, such as in *S. Vishnuvarma* v. *Apollo Distilleries (P) Ltd*., 2014 SCC OnLine NGT 3428, South. They have even passed orders to get past perverse orders of the boards in *Belmaks Metal Works* v. *Pondicherry Pollution Control Committee*, 2004 SCC OnLine Mad 844 : (2005) 1 MLJ 441; *See also* Armin Rosencranz & Michael Jackson, *The Delhi Pollution Case: The Supreme Court of India and the Limits of Judicial Power*, 28 COLUM. J. ENVTL. L. 223–254, 245–46 (2003).

attentive to the ecosystem that the point source is draining into or the cumulative effective effect that numerous point sources could have on the ecological resource as a whole. In other words, the ambient risk of human activity is not necessarily foregrounded by the regulatory approach contained in the statute.

A good example in this regard is, an early PIL order in the Ganga pollution case. In this decision, despite recognizing the complexity of the problem of river pollution as being caused by multiple sources, the court initially only passed orders against polluting tanneries directing them to install primary (cost effective) treatment.[55] Of course, this order was addressed not to a single point source but to the whole class of polluting tanneries. Nonetheless, the order did not cover all the other forms of river pollution such as sewage, nor mandate a more robust technological solution to deal with the pollution emitted by the tanneries themselves. However, the PIL mode allowed the court to eventually pass a range of other orders dealing with other issues thereby addressing pollution from other sources as well.[56] And, in doing so the court was attempting to forge something of an ecosystem response to the problem of water pollution even though from the materials on the record it is less than clear that it had any clear map for the riverine ecosystem, in this case of the Ganga, as a whole.

It is quite a leap of imagination from the Ganga pollution cases to suggest that they are made from the perspective of the ecosystem as a whole. In fact, the ease with which the court mandated only basic and primary pollution control technology for the tanneries suggests that it was just as comfortable to pass orders based on feasibility as opposed to what was technologically necessary to secure the environmental health of the river as a whole. However, viewing the Court's continued supervision of the matter and its other orders as a heuristic illustrates that mere emphasis on point sources and what is cost effective at the level of the point source cannot solve the problem the broader problem of the ecological health of a river as a whole. And, perhaps it was this aspect of the pollution problem that the court was attempting to address in the *Vellore* case[57] by adopting a stronger standard of risk stronger than that specified in the statute.

The potted manner in which the Indian Supreme Court foregrounds the need to secure the ambient health of ecological resources is articulated with considerably greater clarity in the Clean Air in the United States. Through that statute dealing with air pollution, the US environmental regulators are required to set standards of pollutants at a level 'requisite to protect the public health' with 'an adequate margin of safety'.[58] This has even been understood to provide citizens with a right to a standard that protects public health that they can demand against

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55 *M.C. Mehta* v. *Union of India*, (1987) 4 SCC 463.
56 *See M.C. Mehta* v. *Union of India*, (1988) 1 SCC 471 : AIR 1988 SC 1115.
57 *Vellore Citizens' Welfare Forum* v. *Union of India*, (1996) 5 SCC 647.
58 § 109(b)(1).

the regulator as a matter of entitlement.[59] Taking such an approach would demand regulation that places the ecological resource and human health that it sustains at the centre stage, and an examination whether regulatory approaches are organized to best secure this end.

Public interest cases raise this holistic aspect of risk management, but in the absence of its explicit inclusion in legislative policy, this form of responding to risk might not have the clarity in regulatory response as we noticed in the *Vellore* case. Despite this, PIL cases make salient a form of risk management that must inform the future study and regulation of environmental risk analysis in India. It is on this note that PIL as a form of standards based risk management must be tied together with the other forms of standards management discussed by this paper to draw this study to a conclusion.

VI. CONCLUSION

This paper has attempted to locate by way of a snap shot, the significance of risk management in Indian environmental law through its instantiation in the Water Act. In doing so the paper highlighted the conceptual framework of risk in models of probability, and examined the specific manner in which it was incorporated into the legislative scheme of the Water Act. But more importantly, the paper examined the extent and form in which this risk framework has informed adjudication, and the types of adjudication that it has produced. This in turn showed that the numbers of standards based risk adjudication cases has not occupied a particularly important place in the operation of the Water Act. Though the paper did not diagnose the seemingly marginal place of risk adjudication in the Water Act, or indulge in a detailed scrutiny of the type of cases that constituted the majority of those adjudicated, it deployed the exceptional instance of the PIL case to speculate about the limits of legislative policy in the Water Act to address complex ecological problems. In this manner, this paper outlined the Water Act as a scheme of risk management and its limitations, when addressing environmental harm from the point of view of sustaining the overall ecological quality of surface water resources in India.

[59] For instance, *see* Massachusetts v. Environmental Protection Agency, 2007 SCC OnLine US SC 20 : 167 L Ed 2d 248 : 549 US 497 (2007).