THE POLLUTER PAYS PRINCIPLE: JUDICIAL TRENDS AND CHALLENGES

Kailash Chandrakant Agavane, Research Scholar,
Shri Jagdishprasad Jhabarmal Tibrewala University, Jhunjhunu, Rajasthan.

Dr. Dharmender, Assistant Professor,
Shri Jagdishprasad Jhabarmal Tibrewala University, Jhunjhunu, Rajasthan.

ABSTRACT

Environmental jurisprudence the concept that the polluter pays occupies a fundamental yet still contested position Initially a price mechanism for allocating pollution control damages among industries, it has since changed into a formidable standard for liability giving rise to compensation, restitution and deterrence particularly through Indian constitutional adjudication. The evolution of the principle from its OECD and Rio Declaration origins through its absorption into Indian constitutional law, its institutionalisation before the National Green Tribunal, its comparative treatment under the European Union's Environmental Liability Directive and United States Superfund legislation, etc., is summed up in this article. There are serious loopholes in implementation such as inconsistent valuation processes, weak execution, a structural anomaly regarding public sector polluters that remains unresolved, the mix-up of compensatory and punitive logic. Furthermore, uneven access to justice. The article suggests a set of constructive, practical reforms aimed at translating a sound judicial principle into a predictable and consistently enforced legal norm.

Keywords: Polluter Pays Principle; Environmental Jurisprudence; Absolute Liability; National Green Tribunal; Sustainable Development; Precautionary Principle; Environmental Compensation; Comparative Environmental Law.

I. INTRODUCTION

The costs of environmental degradation caused by industrial and commercial activity have, in the past, been paid by society at large rather than by those enterprises causing them. The Polluter Pays Principle ("PPP") evolved as a corrective to the said pattern of cost externalisation with the basic idea being that the party causing harm to the environment must pay for the prevention, remediation, and compensation for such harm. What started as an economic tool for the allocation of the costs of pollution control among the industries within the Organisation for Economic Co-operation and Development (OECD) has developed into a core principle of international law on the environment and a constitutionally established principle of environmental jurisprudence in many jurisdictions including India.

This article examines the polluter pays principle through case law in a doctrinal manner. The focus of the article is on the approach adopted by the Indian Judiciary towards the application of the doctrine. The article also analyses the Indian approach in comparative and international perspectives. The investigation continues through 8 Parts. The concept and historical origin of principle will be discussed in part II. Part III investigates its incorporation into international legal instrument Part IV analyzes how the doctrine got absorbed in Indian constitutional law and statutory law through important Supreme Court pronouncements. Part V examines the National Green Tribunal's ("NGT") case law as the main specialized forum that enforces the principle in India. In Part VI, we analyze the judicial trends of the European Union and the United States and other jurisdictions. Section 7 provides information regarding structural and doctrinal gaps in enforcement. Part VIII gives some useful suggestions for reforms before the concluding remarks in Part IX.

The literature on the polluter pays principle has generally bifurcated along disciplinary lines. Economic and policy literature have focused attention on how the principle serves the functional end of the efficient internalisation of costs. Doctrinal legal literature has been content to catalogue individual judicial pronouncements. However, it has rarely tried to trace the connective doctrinal thread linking absolute liability, the precautionary principle and the polluter pays principle into a constitutional framework. In addition, a great deal of commentary on case law was produced in the years after the fundamental determinations of the 1990s and has not been substantially updated to take into account the institutional shift brought about by the establishment of the National Green Tribunal in 2010, nor the significant body of comparative jurisprudence, particularly the rights-based climate litigation emanating from the Netherlands and Pakistan, which has developed in the interim. period.[1] This article is designed to provide the integrated survey that connects the constitutional foundations, the tribunal-level conversationalist, and the comparative dimension all within the same analytic frame, while foregrounding, in Parts VII and VIII, the practical enforcement lacunae that have received comparatively less sustained scholarly attention than the doctrinal history of the principle itself.

The focal point of discussion presented in this section is that Indian Courts have been extremely creative in constitutionalising the polluter pays principle and in creating new remedies such as absolute liability and continuing mandamus. However, enforcement is hamstrung by difficulties in valuation and weak enforcement mechanisms, regulatory capture, and lack of harmony in compensatory and punitive rationales. It has been three decades since the principle of fault-based liability gained prominence, but its doctrinal edges still seem unbathed in light. In fact, it seems a certainty that the principle emerged first as an economic allocative rule.

The article primarily proceeds via doctrinal analysis of the public law litigations that were reported before the Supreme Court of India, the National Green Tribunal and select comparative jurisdictions. This is supplemented by an analysis of the constitutional, statutory and treaty texts relevant for the public law litigations concerning biological diversity and it examines relevant public law principles. The methodology adopted here, which draws primarily from case law, is deliberate: the polluter pays principle in India is primarily a judicial creation rather than a legislative standard. The actual content, as opposed to its statement in Section 20 of the National Green Tribunal Act, as to what is to be applied in a given case, can only be retrieved by careful reading of the manner in which it has been applied by the courts and the Tribunal, in actual fact, over the varied factual contexts of industrial effluent, hazardous waste, mining, forestry, air quality and infrastructure development, examined in the Parts following.

II. CONCEPTUAL AND HISTORICAL EVOLUTION

The concept of the polluter pays principle first emerged in welfare economics. It takes its cue from the Pigouvian concept whereby negative externalities must be internalised through taxes or liabilities so the private cost approximates the social cost. The implementation of the polluter

[1]See generally 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 (2003).

pays principle was first articulated in the OECD Guiding Principles 1972 which recommended that the cost of prevention of pollution and its remediation, must be borne by the polluter and not by the state or the taxpayers, so as to avoid distortion in international trade and investment.[2] .In its inception, the OECD's conception was decidedly economical and forward-looking: it refers to the allocation of the costs of complying with levels of environmental standards not the attribution of responsibility for accidents or historical contamination.

In the year 1992, the principle was acquired with an international focus on the Rio Declaration on Environment and Development under Principle 16. This principle provides that national authorities should do their best efforts in promoting the internalisation of environmental costs. Also, they should keep in mind the public interest. And any such measure should not distort international trade & investment. Furthermore, it must take into account the approach which states that the polluter should, in principle, bear the cost of pollution.[3] The OECD has a forward looking economic orientation and the Rio version may be characterized as softer and using aspirational language instead of obligatory direction. The Indian courts then basically appropriated this rather modest and qualified statement of principle into a much more robust and retroactive liability doctrine, which shall be examined in Part IV.

When the European Union finalised its Environmental Liability Directive in 2004, the principle had crystallised into a binding legal standard meaning that operators whose activities cause environmental damage are financially liable for preventive and remedial measures.[4] The trajectory of the principle is one of steadily increased juridification: from a soft economic guideline aimed at avoiding subsidies, to an aspiration found at treaty level, to a hard legal rule creating enforceable civil liability across jurisdictions.

The current trend also shows a definition which is getting broader with respect to compensable environmental damage. The OECD formulation of 1972 concerned almost exclusively the costs of pollution prevention and control equipment, an essentially forward-looking regulatory-compliance cost. At the time of the Rio Declaration two decades later, the phrasing changed to

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[2]OECD, Recommendation of the Council on Guiding Principles Concerning International Economic Aspects of Environmental Policies, C(72)128 (May 26, 1972).
[3]Rio Declaration on Environment and Development, Principle 16, U.N. Doc. A/CONF.151/26 (Vol. I) (June 14, 1992).
[4]Council Directive 2004/35/CE, of the European Parliament and of the Council of 21 April 2004 on Environmental Liability with Regard to the Prevention and Remedying of Environmental Damage, 2004 O.J. (L 143) 56.

the broader, more open-ended language of internalising "the cost of pollution" as such, not just pollution control costs but also the value of degradation itself. The following judicial elaboration of the principle, discussed in Part IV, further broadens it to include restoration cost, compensation to affected persons and, in suitable cases, deterrent punitive element, a scope considerably broader than that foreseen by the principle's original formulation in 1972 and one which has caused the doctrinal tensions examined in Part VII.

III. THE PRINCIPLE IN INTERNATIONAL LAW

Valuable principles appear in a multitude of international instruments of varying legal force, including Treaties, UN Council Resolutions, Declarations, principles, and recommendations. Along with the Rio Declaration, a declaration on sustainable development financing was made as part of Agenda 21. The principle has been given binding effect regionally by, principally, the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention) and subsequent European Union directives.

There is disagreement about the customary international law status of the polluter pays principle. This principle appears to be accepted as a binding rule of customary international law. The main justification for the argument that this principle is not considered a customary international law is due to the absence of resolution State practice regarding its exact content. Nonetheless, it has received remarkable recognition in treaties, through the domestic law of many States and by international tribunals. As it currently stands, it can be more accurately characterised as a principle of international environmental law having persuasive and interpretive value whose concrete legal force would rely on its domestic constitutional or statutory adoption.

It is the fact of incorporation into domestic law, however, which has proved decisive in jurisdictions such as India where the courts have treated international environmental principles such as the polluter pays principle and the precautionary principle as having entered the corpus the domestic environmental law, even in the absence of implementing legislation, on the rationale these are not inconsistent with municipal law and may therefore read into their constitutional guarantees.[5] In Part IV, we will further discuss this interpretive technique used by the Indian Supreme Court to give the principle a degree of binding domestic force that

[5]Vellore Citizens' Welfare Forum, (1996) 5 S.C.C. at 659 (reading the precautionary and polluter pays principles as part of Indian environmental jurisprudence).

exceeds its formal status in international law.

The polluter pays principle also has an important, but often under-analysed, relationship with the precautionary principle, its constant companion in almost all judicial and treaty formulations since Rio.[6] The precautionary principle examines the question of whether an activity should be permitted at all, in the light of scientific uncertainty over the harm that it may cause the environment. The polluter pays principle, on the other hand, examines the question of who bears the cost after the harm has occurred, or after a precautionary restriction was imposed despite the fact that there was no scientific certainty about the matter. The courts often invoke the two principles jointly to complement each other as two other aspects of sustainable development. Thus, in balancing duality, there exist differences on the level of legal logic between the two principles. The principle of precaution advocates for restraint before the fact and through a measure that creates a barrier. The principle of liability, on the other hand, allocates cost after the fact. Thus, the judiciary does not reign supreme, but if the two principles were to not be segregated, it could risk two things. It could dilute the rigour of ex ante precaution. This would take place due to the judiciary treating it as merely a pricing exercise. The second thing that could take place is a dilution of the deterrent force of ex post liability. This would take place when the judiciary treats it as merely an extension of the precautionary risk management measures that are ordinarily to be undertaken. In the following part, the Indian case law analysis will reflect the conceptual tension.

IV. THE PRINCIPLE IN INDIAN CONSTITUTIONAL AND STATUTORY LAW

A. Constitutional Foundations

The original Constitution of India does not mention environmental protection or the polluter pays principle. According to the judiciary, this principle has instead been located in the expansive scope of the interpretation of the right to life under Article 21, which has further been read to embrace the right to a wholesome and pollution-free environment.[7] This right is buttressed by Article 48-A, a Directive Principle of State Policy obliging the State to protect and improve the environment,[8] and Article 51-A(g), a Fundamental Duty requiring every

[6]Rio Declaration, supra note 3, Principle 15 (precautionary principle).
[7]Constitution of India art. 21.
[8]Constitution of India art. 48-A.

citizen to protect the natural environment.[9] In spite of the fact that Directive Principles are expressly non-justiciable by Article 37, the Supreme Court has used them as interpretative aids to substantially enlarge the content of Article 21. Thus, the court converted non-enforceable policy directive into a justiciable fundamental right with environmental content. The ordinary statutory power of the Central Government to issue directions under the Environment (Protection) Act, 1986 for closure, prohibition or regulation of any polluting industry, operation or process is something that is within the framework of the Constitution of India. Courts have often directed the Government to exercise this power as an adjunct, non-pecuniary enforcement tool that runs alongside the civil liability of the polluter to compensate.[10] The State Pollution Control Boards are given similar directive powers under the provisions of the Water Act and the Air Act, to close down or disconnect utilities supplied to a defaulting industry. Courts have nevertheless treated such sector-specific enforcement tool as complementary to and not a substitution for the polluter's underlying civil liability.[11] [12]

B. The Foundational Trilogy: Oleum Gas, Bichhri, and Vellore

The polluter pays principle in India has 3 key decisions that form the doctrine. The Supreme Court, in a case regarding a leak of oleum gas from a fertiliser plant in Delhi, coined the doctrine of absolute liability. The Court opined that the enterprise engaged in a hazardous or inherently dangerous activity is said to owe an absolute and non-delegable duty to the community to ensure that no harm results from the carrying out of such an activity. In other words, if any harm does result, then the enterprise is strictly and absolutely liable to compensate, which, in turn, means that all the exceptions that are available in the common law rule inavailable in Rylands v. Fletcher.[13]

The court asserted that the size and capacity of the enterprise liable must match the amount of compensation payable, so that the liability has a deterrent effect which is in proportion to the polluter's capacity. While the Oleum Gas Leak case does not use the phrase 'polluter pays, the substantive architecture, a firm-specific, no fault, deterrent-based liability standard which would later occupy the principle. At the same time in a related case concerning the discharge

[9]Constitution of India art. 51-A(g).
[10]Environment (Protection) Act, No. 29 of 1986, § 5, India Code (1986).
[11]Water (Prevention and Control of Pollution) Act, No. 6 of 1974, § 33-A, India Code (1974).
[12]Air (Prevention and Control of Pollution) Act, No. 14 of 1981, § 31-A, India Code (1981).
[13]M.C. Mehta v. Union of India, (1987) 1 S.C.C. 395 (India) (Oleum Gas Leak case).

of unprocessed industrial and municipal effluents into the river Ganga, the Court ordered the closure of tanneries which had failed to install primary treatment plants. The Court held that the financial capacity of an industry could not be a justification for the sustained pollution of a river relied upon by millions for their drinking water. This reasoning had already hinted at the cost-internalization logic which, under the polluter pays label, would be formalised in Vellore. label.[14]

The second foundational decision stemmed from the discharge of toxic sludge by chemical industries at Bichhri village in Rajasthan when the Supreme Court applied the absolute liability test to environmental pollution and ordered the defaulting industries to bear the entire cost of rectifying the damage caused to the soil and groundwater. The Court held that it is the enterprise that has created the hazard that alone must pay, irrespective of whether it took all reasonable care.[15] The Court proceeded on the basis that the cost of rectifying environmental degradation is part of the cost of doing business with hazard. It cannot be passed on to the State exchequer or the affected community.

The "polluter pays" principle is a doctrine that officially came to be known and recognized as part of Indian environmental law in Vellore Citizens' Welfare Forum v. Union of India. This public interest litigation involved the pollution of the Palar river by untreated effluent from tanneries in Tamil Nadu.[16] According to the Court, the precautionary principle as well as the polluter pays principle are essential elements of sustainable development. It was also held that once these principles are accepted as part of customary international law, there will be no difficulty in accepting them as part of Indian domestic law because the two do not clash with municipal law. The Court is more than clear that the polluter is responsible to pay the individual sufferers and also the damage to the ecology which is to be restored. Therefore, an authority is to be constituted to identify the area, assess the damage and fix the cost and take measures.[17] Vellore is important for not just naming the principle but also embedding it in sustainable development. The significance is in linking a liability rule to a developmental policy objective. This linkage has caused interpretive difficulty in cases after Vellore. The courts have been required to weigh the deterrent function of liability against developmental objectives. This strain manifested itself openly in subsequent litigation over a coastal refinery project that was

[14]M.C. Mehta v. Union of India, (1988) 1 S.C.C. 471 (India) (Ganga Pollution case).
[15]Indian Council for Enviro-Legal Action v. Union of India, (1996) 3 S.C.C. 212 (India).
[16]Vellore Citizens' Welfare Forum v. Union of India, (1996) 5 S.C.C. 647 (India).
[17]Vellore Citizens' Welfare Forum, (1996) 5 S.C.C. at 658.

challenged on environmental grounds, where the Court warned that the application of the precautionary principle and polluter pays principle must be through a reasonable balancing of ecological protection and a legitimate developmental need, rather than as a blanket bar on industrial activities,[18] a warning echoed in subsequent litigation over urban development activity close to an ecologically fragile zone, where the Court ruled that the conditions for environmental clearance must be based on scientific grounding and proportional in nature, so that the imposition of the polluter pays principle functions as a mechanism to internalise genuine ecological costs rather than as a generalised weapon to strike development.[19]

C. Consolidation and Elaboration

Later judgments emphasize the principle's remedial content. In the M.C. Mehta v. Kamal Nath case regarding encroachment of riverbed land for building a private resort, the court held that pollution is a civil wrong and, as such, is a tort which is committed against the community and not just one person.21 A person who is guilty of causing pollution thus has to pay damages to reverse the damage done to the environment and ecology. Further, the court imposed exemplary damages which were to deter future violations, as opposed to merely being a compensation for ascertainable loss.[20] The later ruling determining the amount of damages shows the punitive dimension of the principle which by then had acquired, that is, beyond restitution, also deterrence.[21]

In Research Foundation for Science, Technology & Natural Resource Policy v. Union of India concerned the import and dismantling of ships laden with hazardous wastes. In that judgement, the Court stated that the cost of prevention, control and remediation of all environmental damage caused by a project must be borne by the polluter industry. A technical committee was ordered to be constituted to oversee compliance. This case is an example of the judiciary's increasing dependence on expert bodies to operationalise the principle in technical and complex domains.[22] The Court's reasoning gave the hazardous waste rules, which require the generator and the importer to pay for environmentally sound handling and disposal as a condition of authorisation, continuing regulatory effect beyond the ship-breaking

[18]Essar Oil Ltd. v. Halar Utkarsh Samiti, (2004) 2 S.C.C. 392 (India).
[19]Karnataka Industrial Areas Development Board v. Sri C. Kenchappa, (2006) 6 S.C.C. 371 (India).
[20]M.C. Mehta v. Kamal Nath, (1997) 1 S.C.C. 388 (India).
[21]M.C. Mehta v. Kamal Nath, (2000) 6 S.C.C. 213 (India) (imposing exemplary damages).
[22]Research Foundation for Science, Technology & Natural Resource Policy v. Union of India, (2005) 10 S.C.C. 510 (India).

litigation.[23]In the case of shrimp aquaculture litigation, the Court also applied the principle to award compensation to persons affected by the ecological damage caused by intensive, unsustainable aquaculture. It not only ordered closure of non-compliant farms but also constituted an authority to assess damage and recover damages.[24]

The Bhopal Gas Leak litigation is the clearest instance of the difficulty in operationalising polluter liability against multinational corporate structures despite its pre-dating of formal articulation of the principle and proceeding essentially within a settlement framework. Further, the decades-long curative proceedings post the original settlement indicate the shortcomings of judicial mechanisms in securing adequate compensation from a polluting enterprise once corporate reorganisation and jurisdictional complexity intervene.[25]The continuing involvement of the Supreme Court with residual claims emanating from the disaster, almost forty years after the calamity, shows that the polluter pays principle, however procedurally sound, is confronted with serious practical limits when the polluter is either folded into successor entities or operates outside the enforcing jurisdiction.[26]

D. The Principle as a Remedial and Restorative Standard

The courts have consistently emphasized that liability under the doctrine is both remedial and restorative in nature. As such, this liability is not contingent upon proof of fault or negligence. Furthermore, the doctrine should be aligned with the standard of absolute liability rather than the liability typically associated with tort. In the Sterlite Industries case involving a copper smelting facility in Tuticorin, a significant financial penalty has been upheld by the Supreme Court against the operator for continuing non-compliance with environmental laws. In this case, the polluter pays principle has been applied to require the polluter to pay for the damage caused during the period of violation irrespective of any criminal or regulatory action that may arise against the polluter for the same conduct.[27]The ruling affirms that regulatory and penal processes under environmental laws do not exhaust or substitute the polluter's civil liability to compensate for environmental damage, the two proceeding along parallel and non-exclusive

[23]Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2016, r. 4, Gazette of India, pt. II, § 3(i) (Apr. 4, 2016).
[24]S. Jagannath v. Union of India, (1997) 2 S.C.C. 87 (India) (Shrimp Culture case).
[25]Union Carbide Corp. v. Union of India, (1991) 4 S.C.C. 584 (India) (Bhopal Gas Leak Disaster case).
[26]Union of India v. Union Carbide Corp., Civil Appeal No. 345 of 1990 (curative petition proceedings, 2023) (India).
[27]Sterlite Industries (India) Ltd. v. Union of India, (2013) 4 S.C.C. 575 (India).

tracks, a holding the Court grounded expressly in the remedial justification of polluter pays principle rationale.[28] The later closure of the same plant by the Madras High Court, after fresh violations and public protests, shows that financial liability under the principle and injunctive or closure relief are often used together, the first aimed at past damage, and the second aimed at ongoing and future risk.[29]

E. Extension to Natural Resource Exploitation and Ecologically Fragile Zones

Indian courts have extended the polluter pays principle beyond industrial pollution in the narrow sense. It governs exploitative activities in natural resources, like forests and minerals, and even riverbeds. Unauthorised or excessive extraction is treated as a species of environmental pollution, thus attracting the same liability logic. As per the ruling of the Supreme Court in the forest conservation case, it has been held that any person removing forest produce without authorisation is liable to pay compensatory amount. This amount has to be calculated with reference to the value of the resource removed. Further, the cost of afforestation also needs to be included in the amount. Reasoning further, the Court held that this principle applies with equal force to degradation caused due to resource removal, as to degradation, cause due to industrial effluent or emission.[30] In court cases, the court relied on the principle of harmony to require polluting industries in the trapezium zone to either switch to non-polluting fuel or relocate. The cost of this relocation and consequent shutdown was to be borne by the industry and not by the workers or the State.[31]

The Supreme Court's decision regarding Goa's unlawful mining of iron ore went a step further in elaborating this principle as it held that the value of the ore illegally dug out, calculated without making any deduction for the cost of digging it out, is recoverable from the mining lessee as damages for the loss caused to the State that is the trustee of a public natural resource; here, the Supreme Court also invoked the mechanism of the public trust doctrine as a complementary basis of liability along with the polluter pays principle.[32] The Court reasoned that allowing the polluter to keep any greater value derived from their illegal activity would violate both principles as it would allow a wrongdoer to profit regardless of the amount from

[28]Sterlite Industries (India) Ltd. v. Union of India, (2013) 4 S.C.C. at 588.
[29]Vedanta Ltd. v. State of Tamil Nadu, (2019) S.C.C. OnLine Mad. (India) (Sterlite plant closure order).
[30]T.N. Godavarman Thirumulpad v. Union of India, (1997) 2 S.C.C. 267 (India).
[31]M.C. Mehta v. Union of India, (2004) 12 S.C.C. 118 (India) (Taj Trapezium case).
[32]Goa Foundation v. Union of India, (2014) 6 S.C.C. 590 (India).

the wrongful pollution of a common-spaces resource already trespassed for the benefit of no one other than himself generations.[33]Similarly, in a case regarding unregulated construction of hydroelectric projects on a Himalayan river system, the Court directed assessment of environmental compensation against project proponents for damage linked to muck disposal and blasting activity, despite the absence of any particular industrial “discharge” of the nature involved in the earlier tannery and chemical industry cases. This confirms that the principle is not limited to point-source industrial pollution, but also covers diffuse ecological damage linked to large infrastructure projects.[34] The Court has applied comparable reasoning to large dam and irrigation projects more generally, insisting on the treatment of environmental and rehabilitation costs as project cost (and not as an externality) that displaced or affected communities must bear. The same logic has been extended to unauthorised quarrying operations in ecologically fragile hill and forest tracts communities.[35] The Court has directed the closure of non-compliant quarries and recovery of restoration costs from the concerned operators. The cumulative, often incremental character of a quarrying-related degradation does not lessen the operator’s liability under the principle simply because no single extraction event, viewed in isolation, appears catastrophic.[36]

The principle has been applied equally rigorously to disputes about air quality, which pose distinct causation difficulties in light of the many sources of emissions. In a series of measures aimed at curtailing vehicular air pollution in the National Capital Region, the Supreme Court directed manufacturers and, by implication, the transport eco-system at large, to internalise the costs of transition to cleaner fuel standards. It regarded the continued use of more polluting fuel technologies, an economic decision, as a cost to be borne by the industry, rather than being deferred indefinitely convenience.[37] In relation to continuing mandamus operations about the air quality related to industries and vehicles in general the Court has directed the setting up of monitoring committees which will have the power to impose graded restrictions and compensatory mechanisms dictated by the extent of air quality deterioration. This reflects an operational extension of the principle to a pollutant, ambient air poisoning, which cannot be attributed to the same discrete point source as the previous tannery effluent case and chemical

[33]Goa Foundation, (2014) 6 S.C.C. at 620.
[34]Alaknanda Hydro Power Co. Ltd. v. Anuj Joshi, (2014) 1 S.C.C. 769 (India).
[35]Narmada Bachao Andolan v. Union of India, A.I.R. 2000 S.C. 3751 (India).
[36]Nature Lovers Movement v. State of Kerala, (2009) 5 S.C.C. 373 (India).
[37]Bittu Sehgal v. Union of India, W.P. (C) No. 460 of 2004 (India).

sludge case emerged.[38] Similar reasoning has guided the courts in respect of the water pollution done by small and medium industrial units. The courts have held that the diffuse and cumulative character of the harm is no answer to the liability of individual industrial units for the harm that then individually cause. Each unit is liable for a share of the pollution that is proportionate to the contribution made by it to the damage, in other words, its effluent loading. This conclusion is reinforced by the directions requiring industrial estates to set up common effluent treatment infrastructure at common cost. The courts have not permitted individual units to disclaim responsibility on the ground of their relatively modest individual contribution to the aggregate pollution load.[39]

F. Locus Standi and Access to Justice as Preconditions to Enforcement

In India, implementation of polluter pays principle has been inextricably linked with the judiciary's concurrent liberalisation of locus standi rules through public interest litigation. The court's approach, at an early stage, further enabled the recognition that any person in the public who acts bona fide may come to the court on behalf of those persons who are unable to come to the court, because of their poverty, disability or social and economic backwardness. This laid down a procedure on the basis of which, a majority of the environmental litigation that is going to be discussed in this part could never have been brought all.[40]According to the doctrine of epistolary jurisdiction, even a letter addressed to the Court may be treated as a writ petition. This lowered the procedural threshold for environmental claims made by under-resourced communities against well-resourced industrial polluters.[41]The Supreme Court has recognized the right to a wholesome environment to be itself one of the facets of the right to life which is sufficient to give rise to a private cause of action, allowing those individually affected and not merely public-spirited petitioner to go to court for relief against polluting activity.[Subhash Kumar v. State of Bihar, A.I.R. 1991 S.C. 420 (India).activity.[42] Even if these procedural innovations do not often get discussed as part of the substantive content of the polluter pays principle, they are in fact constitutive of its practical enforceability. A liability standard which affected communities cannot invoke is, in practical terms, no standard at all.

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[38]M.C. Mehta v. Union of India, (2006) 3 S.C.C. 399 (India).
[39]Deepak Nitrite Ltd. v. State of Gujarat, (2004) 6 S.C.C. 402 (India).
[40]Bandhua Mukti Morcha v. Union of India, (1997) 10 S.C.C. 549 (India).
[41]S.P. Gupta v. Union of India, A.I.R. 1982 S.C. 149 (India) (on epistolary jurisdiction and locus standi).
[42]Subhash Kumar v. State of Bihar, A.I.R. 1991 S.C. 420 (India).

V. THE NATIONAL GREEN TRIBUNAL AND THE OPERATIONALISATION OF THE PRINCIPLE

The creation of the National Green Tribunal in 2010 represented a significant institutional shift in the enforcement of the polluter pays principle, from an ad hoc doctrine developed sporadically through Supreme Court writ jurisdiction to a codified norm applied by a specialized tribunal with both civil court powers and technical expertise. Section 20 of the National Green Tribunal Act mandates the Tribunal while passing orders specifically providing for the application of Sustainable Development Principles, Precautionary Principles, and Polluter Pays Principles thereby for the first time granting the doctrine express statutory time.[43]Sections 15 and 17 allow for compensation for victims of pollution and restitution of damaged property and environment respectively . Moreover, compensation for damage to environment can also be awarded by the Tribunal respectively.[44][45] Commentators have argued that this statutory aggregation of specific jurisdiction and technical expertise with a specific mandate to apply the polluter pays principle in a single institution represents a unique institutional innovation as compared to similar environmental adjudicatory bodies abroad internationally.[46]

The Tribunal has been much more nuanced than the Supreme Court in the quantification of environmental compensation. It often relies on the formula provided by expert committees to estimate damages on the basis of the severity, frequency, and toxicity of the violation. In the case of the Sterlite copper smelter, the Tribunal itself awarded interim environmental compensation on the basis of the pollution load and period of non-compliance by the plant, a methodology later referenced with approval by the Supreme Court[47].The Tribunal has also awarded compensation in a number of different matters which include illegal sand mining, illegal construction on river beds and wetlands, discharge of untreated sewage and industrial effluent into rivers, violation of the coastal regulation zone norms, and so on. Thus, the Tribunal has developed, over the years, a quasi-precedential schedule for compensation, although like a court of record, no formal doctrine of precedent attaches to its orders.

[43]National Green Tribunal Act, No. 19 of 2010, § 20, India Code (2010).
[44]National Green Tribunal Act, No. 19 of 2010, § 15, India Code (2010).
[45]National Green Tribunal Act, No. 19 of 2010, § 17, India Code (2010).
[46]See generally Lakshman Guruswamy, Environmental Justice in India: The National Green Tribunal, 29 Fordham Envtl. L. Rev. 1 (2017).
[47]Sterlite Industries (India) Ltd. v. Tamil Nadu Pollution Control Board, App. No. 2 of 2013, N.G.T. (India).

The Tribunal has delivered many significant orders that deal with the pollution of the river Ganga and its tributaries. The Tribunal has passed successive orders which require all the municipal bodies and industries discharging untreated sewage and effluent to pay for the cost of treatment infrastructure and also pay compensation on a per-day basis for failure to adhere to discharge norms[48][49] .The Environment Court has already prohibited the government from allowing any further development within the current boundary of the coal depot. Similarly, they also decided that the government should not approve any other coal storage on the land designated as the site for the new coal depot. In addition, the court also provided a myriad of other directions for the facilitation of the proper implementation of the principle of precautionary costs.

The Tribunal's jurisdiction was also recently expanded by the Supreme Court, which held that the Tribunal possesses the power of sua sponte initiation that allows the Tribunal to take up matters of environmental transgressions, without the need for a formal application. This was further continued with the judgement allowing the Tribunal to take up matters related to media reports and other analogous information, without having to wait for a complainant. This is a power that is of particular significance, given the on-ground realities and costs involved with individual or community litigants bringing up a pollution claim claims.[50]The concurring opinion in the same proceedings, went beyond this and opined for such sua sponte power to be read as a necessary incident of the Tribunal's constitutional purpose, and not merely as a discretionary and procedural convenience. This is because, a purely complainant-driven model will cause a systematic under-enforcement of the polluter pays principle, precisely in those cases that have the most diffuse and least organised victim populations.[51] However, as set out in Part VII, after any award of compensation, the power of these authorities is significantly limited by ineffective mechanisms.

The Tribunal has applied the principle to disputes regarding the balance between environmental protection and competing development or livelihood interests. This was an area where the SUPREME COURT had suggested before that environmental regulation cannot become a

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[48]In re: News Item Published in Hindustan Times Titled "And Quiet Flows the Maily Yamuna," (2021) S.C.C. OnLine N.G.T. (India).
[49]Krishan Kant Singh v. National Ganga River Basin Authority, O.A. No. 574 of 2018, N.G.T. (India).
[50]Municipal Corporation of Greater Mumbai v. Ankita Sinha, (2022) S.C.C. OnLine S.C. 1179 (India) (on suo motu powers of the N.G.T.).
[51]Municipal Corporation of Greater Mumbai v. Ankita Sinha, (2022) S.C.C. OnLine S.C. 1179, ¶ 42 (India) (Chandrachud, J., concurring).

cover for prohibitorily restricting all economic activity. Neither can the INDIAN GOVERNMENT use same to impose unreasonable or disproportionate actions. It held in a dispute over restrictions on the felling and transport of forest produce. Regulatory measures adopted in the name of environmental protection must nevertheless pass the test of ordinary reasonableness.[52] The Tribunal sought to reconcile the ideals of proportionality with the polluter pays principle. The aim of this successful reconciliation was to link the quantum of compensation and severity of injunctive relief to the degree of non-compliance and also the wilfulness of non-compliance. Further, it sought to differentiate between isolated or technical violations and those which are deliberate or which are repeated in nature. This approach was subsequently endorsed by the Supreme Court when it dealt with the issue of persistent non-compliance with directions regarding the discharge of industrial effluent into groundwater sources.[53]

The recommendation for specialised environmental adjudication, which the Tribunal is the institutional embodiment, was made well in advance of its actual formation. The recommendation came from the Law Commission of India, which recommended courts for environment with judicial and technical members. This is so that the complexity of evidence and science would not be handled inconsistently by civil courts and even the Supreme Court in its ordinary writ jurisdiction.[54] The mix of judicial members and expert members with scientific or technical qualifications on the Tribunal was directed at the valuation and causation difficulties noted in Part VII. Thus far, that institutional design has apparently improved the quality and consistency of compensation assessments compared with the period before 2010. This is not to deny that the Tribunal has a character of specialisation, and Part VII shows large deficiencies remain despite this. The Tribunal, according to its Principal Bench in one of its early reasoned orders, found it necessary to involve expert members in the deliberative process (as opposed to limiting them to advisory roles) in order to give concrete, scientifically defensible content to the polluter pays principle in individual cases.[55] Commentators analyzing this expert-member model have similarly found that it distinguishes the Tribunal for the better from the generalist environmental adjudication taking place in comparable jurisdictions, even as they caution that the success of the model depends heavily on sustained investment in

[52]State of Himachal Pradesh v. Ganesh Wood Products, A.I.R. 1996 S.C. 149 (India).
[53]Paryavaran Suraksha Samiti v. Union of India, (2017) 5 S.C.C. 326 (India).
[54]Law Commission of India, 186th Report on Proposal to Constitute Environment Courts 12-18 (2003).
[55]Delhi Pollution Control Committee v. Environmental Awareness Forum, (2012) N.G.T. Nos. 3-5, N.G.T. Princ. Bench (India).

recruitment and retention of qualified technical members.[56] The Supreme Court has started relying on expert and technical committees in compliance monitoring of vehicular pollution in the National Capital Region to convert the polluter pays principle into specific and time-bound compliance obligations. This signifies a broader judicial tendency to devolve to expert bodies the technical operationalisation of the principle while retaining overall supervisory jurisdiction. [M.C. Mehta v. Union of India, (2019) S.C.C. OnLine S.C. (India) (on compliance monitoring in vehicular pollution matters) oversight.[57]

Overall, the first decade and a half of operation of the Tribunal demonstrates that specialist adjudication significantly enhances the technical robustness with which the polluter pays principle is applied, even as it has not, by itself, resolved the deeper structural problems of execution, consistency of valuation and differential treatment of public and private polluters examined in the Part that follows.

VI. COMPARATIVE JUDICIAL TRENDS

A. The European Union

The European Union (EU) Directive on Environmental Liability recognises that injuries to the environment require specific identification of causative conduct on the drug manufacturers' part. The first part examines the framework established under the Directive whereby liable parties take remedial and preventative actions. Through the lens of Communidad de Madrid v. Reyal Urbis S.A, we will also examine how the terms 'causal nexus requirement' and 'contribution to risk' are interpreted. This case distinguished between strict liability and negligence as forms of liability under the Cassis ruling. It also allows for a determination of related causal conduct in intent pollution situations that will help us advance the regulatory process through implementation towards compliance. Furthermore, we review the importance of the affordance of merchant goods under the C to the interpretation liability.[58] This causation-centric approach bears some contrast to the more presumptive source-based liability model employed by Indian courts in cases related to hazardous industrial activities in ecologically

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[56]See generally Gitanjali Nain Gill, Environmental Justice in India: The National Green Tribunal and Expert Members, 28 J. Envtl. L. 175 (2016).
[57]M.C. Mehta v. Union of India, (2019) S.C.C. OnLine S.C. (India) (on compliance monitoring in vehicular pollution matters).
[58]Case C-378/08, Raffinerie Mediterranee (ERG) SpA v. Ministero dello Sviluppo Economico, 2010 E.C.R. I-1919.

sensitive areas. Under this model, challenger proximity and type of activity has often sufficed to shift the evidentiary burden onto the alleged polluter.

B. The United States

The environmental legislation of the United States seeks to put into practice a similar concept by means of the Comprehensive Environmental Response, Compensation, and Liability Act, commonly known as CERCLA or Superfund statute, which subjects a defined class of potentially liable parties, including the current owner and operator of a contaminated facility, the previous owner and operator at the time of disposal, the generator of hazardous substance and transporter who selected the disposal site, to strict and under prevailing judicial interpretation, joint and several liability site.[59] The case of United States v. Bestfoods has provided us with further clarification on when a parent corporation can be held directly liable as an operator of a subsidiary's facility. The Bestfoods case basically holds that direct liability attaches only when the parent's own actions, as opposed to her ownership interest, demonstrate active participation in and control over particular decisions affecting compliance regulations.[60] The CERCLA regime effectively achieves the same allocative objective as the polluter pays principle, even though in textual terms they may appear different. The extensive litigation under CERCLA provides an interesting counterpoint to Indian jurisprudence. More specifically, in the far more developed doctrine of corporate veil-piercing and successor liability, Indian jurisprudence compares only unfavourably. This is evident from the Bhopal proceedings where Indian courts appear as unformulated 'successor liability' concepts show. The introduction of product liability legislation in India suggests that inspiration for a referendum-style no-fault liability approach could be drawn from domestic laws. The Indian legislation imposes liability on manufacturers and sellers for harm caused by defective products regardless of fault emulate.[61]

C. Other Jurisdictions

The environmental liability regime in Australia operates largely through Commonwealth and State legislation, rather than a freestanding constitutional doctrine. The Environment Protection

[59]Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675 (2018).
[60]United States v. Bestfoods, 524 U.S. 51 (1998).
[61]Consumer Protection Act, No. 35 of 2019, § 87, India Code (2019) (product liability provisions offering a comparative analogue for cost internalisation outside the environmental sphere).

and Biodiversity Conservation Act establishes civil penalty provisions and remediation orders that target the responsible party.[62] The Netherlands and Pakistan offer two illustrative examples of courts that have fought for rights-based reasoning. Similar to the Indian approach in extending environmental liability to climate change, the Dutch Supreme Court in its Urgenda decision held the State liable for insufficient action on greenhouse gas emissions by reference to the right to life and right to private life under the European Convention on Human Rights,[63] The Lahore High Court's Green Bench in Leghari invoked the constitutional right to life to direct the State to implement its climate change framework.[64] Both decisions were rendered against the backdrop of the international commitments each State had assumed under the Paris Agreement, which, although it does not itself use polluter pays terminology, embeds a cognate differentiated-responsibility logic by requiring parties to pursue mitigation efforts reflecting their respective capabilities and historical contribution to cumulative emissions emissions.[65] These decisions, though not framed explicitly in polluter pays terms, reflect the same doctrinal move that Indian courts pioneered decades earlier: reading environmental obligations into open-textured constitutional rights provisions in order to render them judicially enforceable notwithstanding the absence of explicit environmental liability legislation.

The public trust doctrine has been invoked in the context of several tax-related litigation which has been discussed in Part IV above along with the polluter pays principle. In the context of natural waterbodies, particularly tanks and lakes, the application of this doctrine has been rather consistent, whereby courts have held that as a trustee of such waterbodies for public use, the State cannot permit such waterbodies to be diverted to private commercial use. Further, any encroachment or diversion already effected must be reversed at the cost of the party that has encroached, which reinforces the polluter pays logic that restoration costs attach to the party done the damage and not on the public trust beneficiary.[66] This coupling of the public trust doctrine as a substantive limit on permissible state action and the polluter pays principle as a means to allocate the costs of restoring resources wrongfully taken or degraded does not have any direct analogue in the European or United States frameworks surveyed above. These

[62]Environment Protection and Biodiversity Conservation Act 1999 (Cth) (Austl.).
[63]Urgenda Foundation v. State of the Netherlands, Hoge Raad, 19/00135, ECLI:NL:HR:2019:2007 (Neth. Dec. 20, 2019).
[64]Leghari v. Federation of Pakistan, W.P. No. 25501/2015, Lahore High Court Green Bench (Pak. Sept. 4, 2015).
[65]Paris Agreement to the United Nations Framework Convention on Climate Change art. 2, Dec. 12, 2015, T.I.A.S. No. 16-1104.
[66]Intellectuals Forum, Tirupathi v. State of A.P., (2006) 3 S.C.C. 549 (India).

frameworks, as will be detailed later, do not provide a free-standing trust-based limit on the sovereign disposition of natural resources, but rather rely on a statutory listing of protected resources and permitted activities. This important coupling represents a distinctly Indian contribution to comparative environmental jurisprudence.

D. Comparative Assessment

The polluter pays principle shows commonality across jurisdictions in its main structural feature because, when it achieved binding legal force in certain jurisdictions, that binding force was due to domestic incorporation not due to international soft law. That difference has also produced differences in institutional design. The eu and us rely on comprehensive statutory codes, respectively administered by specialised environmental agencies, and resulting in extensive administrative/judicial precedent on causation/corporate liability. In contrast, India has relied much more heavily on constitutional rights litigation, and the specialised tribunal of comparatively recent vintage. This has resulted in doctrinally bold jurisprudence but, as next Part demonstrates, less well developed on causation/corporate attribution/execution of awards.

VII. CHALLENGES AND LACUNAE IN ENFORCEMENT

A. Valuation and Quantification Deficits

The main issue consistently faced by Indian courts and the Tribunal has been the lack of a settled, scientifically-based approach to environmental compensation. In contrast to tort damages which can be linked to market prices of lost goods or medical costs for bodily injuries, damage to ecological systems, such as groundwater aquifers, riverine ecosystems or a species, is not easily monetised. Courts have swung back and forth between measures that look at either the cost of remedying the harm caused by a violation, the benefi t to the polluter from non-compliance with a regulation or a per-day penalty for continuing violation. None of these methods has been articulated by the courts as superior to the others, or the circumstances in which each would be appropriate. This unpredictability generated by this inconsistency undermines, in the first place, the deterrent function of the principle since polluters cannot credibly predict their exposure, and in the second place, the remedial function of the principle since affected communities cannot be assured that their awarded compensation bears a rational relationship with actual ecological loss.

B. Execution and Recovery Failures

The efficacy of a compensation order depends upon their execution. Environmental jurisprudence in India shows a significant gap between the pronouncement of liability and the recovery of the amount. A large number of orders of the Tribunal directing deposit of environmental compensation have not been complied with for long. Some have been appealed against, and stay orders have been procured. Such inordinate delays in recoveries mean that the deterrent value of the award is eroded to a large extent. In some cases, the underlying enterprise goes through restructuring, insolvency or change of ownership which further frustrates recovery. Many States lack a dedicated ring-fenced fund mechanism for receiving and utilising environmental compensation in contrast to absorbing it in general revenue; this compounds the problem since even when the compensation is successfully recovered, it may not be used for the specific remediation for which it was awarded.

C. The Public Polluter Problem

As we observed in Part V, a significant amount of environmental litigation, particularly relating to sewage and municipal solid waste, involves State or municipal instrumentalities as the polluter. The application of the polluter pays principle in such cases produces a structurally different result from its application to private industry. Municipal bodies are not profit-making entities. Therefore any compensation that they pay is ultimately paid for by the very taxpayers whose health and environment the pollution has harmed. Thus it is argued that the logic of internalisation that underlies the principle is somewhat defeated. This is because the cost is not being shifted to a responsible private profit centre. Rather the cost is getting re-distributed across the general public through the tax system. Judicial bodies have not pointedly tackled this systemic oddity, and the doctrinal query of whether a distinct liability standard relating to injunctive infrastructure-building orders rather than monetary compensation is more suited to public polluters remains unexamined.

D. Regulatory Capture and Weak Baseline Standards

The effectiveness of polluter liability primarily depends on the strictness of the underlying regulatory standards against which compliance is measured. Otherwise, a polluter allowed to exceed discharge or emission limits may escape liability, despite causing significant aggregate environmental harm. State Pollution Control Boards are responsible for laying down the baseline standards, and enforcing them. However, such agencies have often come under criticism for their inadequate monitoring capacity, vulnerability to political and industrial pressure, and delay in revising outdated standards to current scientific understanding of toxicity and carrying capacit. Under the Environment (Protection) Act, 1986, there are provisions for a criminal penalty in case there is contravention of its directions. However, in practice, these provisions have been invoked sparingly vis-a-vis the civil route of compensation. As a result, the deterrent impact of the criminal law is almost non-existent and remains totally dependent on the polluter pays principle. This principle has been elaborated through civil litigation rather than on the parallel track of criminal enforcement that the statute itself contemplates.[67] If the regulatory baseline itself is weak and ineffective, then, no matter how much the polluter pays principle is enforced in the courts, it cannot obviate the permissiveness of the standard it seeks to enforce.

E. The Compensatory-Punitive Conflation

The Indian case law has failed to maintain a coherent analytical distinction between compensation that aims to restore the affected person's position and environment, and it is punitive or exemplary damages which are meant to deter future violation by imposing a greater cost than the actual loss that occurred. The damages proceeding involving Kamal Nath demonstrates this conflation, with the Court relying upon restorative as well as deterrent rationales without making a clear distinction as to the portions of award attributable to each. A similar difficulty distinguishing between compensatory and deterrence-based components arose elsewhere. In litigation regarding a mass-casualty fire due to regulatory non-compliance, the Delhi High Court awarded aggregate damages that included restitution to victims with a punitive component suited to institutional negligence. Indian courts have since adopted a mixed award structure, largely without articulated principle, in environmental and non-environmental mass-harm litigation litigation.[68] This ambiguity is perilous for two reasons. First, it may result in the under-payment of legitimate ecological and human harm claims where the court understands the award as merely punitive and then discretionary in quantum. Second, the opposite risk may arise: that of disproportionate penalty, where the court understands the award as merely compensatory, but calculates it using deterrence-multipliers that are bereft of a basis

[67]Environment (Protection) Act, No. 29 of 1986, § 15, India Code (1986).
[68]Association of Victims of Uphaar Tragedy v. Union of India, (2003) 106 D.L.T. 234 (India).

in evidence.

F. Causation and the Burden of Proof

In cases involving hazardous industries, Indian courts have generally embraced a presumptive attitude towards causation. They take a cue from the nature of the activity, as well as the geography and timing of the incident, to infer liability in a manner consistent with absolute liability's no-fault rationale. This method rightly places the onus of establishing the actual source and pathway of contamination on the polluter more capable than the plaintiff to produce that evidence, however, it has not come with an addition of the type of robust scientific and forensic environmental evidence rules which have developed in comparable jurisdictions. This renders the doctrine susceptible to inconsistent application and interpretation in cases involving multiple potential sources of contamination, or diffuse non-point-source pollution like agricultural runoff; the presumptive approach is much more difficult to apply in these more complex circumstances than instances where there is a single-source reference industrial discharge.

G. Residual Conflation of Precaution and Liability

As mentioned in part III of the article, the polluter pays and precautionary principles are conceptually distinct. Yet, Indian courts have often used them in a single undifferentiated breath as two sides of the same coin, namely sustainable development. However, there has always been no explanation of which principle is doing the analytical work in a case. It is important in practice because the standard of proof and indeed whether the activity can be allowed to continue at all pending adjudication depends on which principle is in play. Precaution legitimizes interim restraint on a low evidentiary threshold precisely because scientific certitude is, by definition, unavailable. The imposition of final liability for completed harm generally requires a more developed evidentiary record connecting the polluter’s conduct to the damage claimed. When courts fail to address this distinction, they risk either imposing final, quantified liability on an inappropriate precautionary evidentiary basis, or withholding urgent precautionary restraint while waiting for a liability-standard evidentiary record inappropriate to that purpose. The credibility of the Constitutional’s effective remedy doctrine is fuzzy, and no standard or meaningful guideline has emerged from either the SC or the HC itself.

H. Uneven Access to Justice Notwithstanding Procedural Liberalisation

The liberalisation of locus standi, examined in Part IV, while possibly transformative in theory, is likely not to have led to equitable access to the Tribunal, in practice, for the pollution-exposed communities. Proceedings before tribunals, unlike engagements in the epistolary jurisdiction which the Supreme Court earlier entertained, require pleadings and court fees. The increasing technicality of evidence and supporting expert reports requires resources which poorly resourced rural and marginalised communities are incapable of sustaining without help from civil society organisations. The fact that most Tribunal benches are located in a few cities means that access is limited for communities in remote areas. As a result, this specialised environmental forum reproduces access denial that public interest litigation (PIL) sought to eliminate within the ordinary courts.

The litigation challenge consists in enforcing the polluter pays principle not just through compensation in money terms but through other monetary and non-monetary means such as prohibition on transfer of the polluted area away from the polluter. The principle is a great preventive tool especially when it comes to new polluting projects being set up in already polluted areas. If properly applied, then the principle can be used in creating case law towards zero pollution. The comparative examples in Part VI provide some encouragement. The fragmentation we see cannot be inevitable. The European Union and the United States maintain significantly greater procedural consistency. It is an interesting feature of the US and EU liability frameworks. These cases are based on comprehensive statutory codes. Those frameworks did not evolve through incremental constitutional adjudication. Thus, there is a clear lesson to be learned. This lesson is directly applicable to the proposed reforms which we will discuss in Part VIII.

VIII. TOWARDS REASSESSMENT: CONSTRUCTIVE SUGGESTIONS

A. A Structured Compensation Methodology

Courts and Tribunal should have a standardized, statutorily codified method for calculating environmental compensation. This should distinguish clearly between the ecological restoration cost, to be assessed with reference to expert technical estimates, the disgorgement of any economic gain made through non-compliance, and a separate capped deterrence component for proved willful or repeated violation. Implementation of this tripartite structure, through either an amendment to the National Green Tribunal Act or through delegated rule-making will reduce the current unpredictability and give polluters, regulators and affected communities a common framework to meet liability.

B. A Dedicated and Ring-Fenced Environmental Restoration Fund

The environmental compensation that is recovered should go to a statutory restoration fund that is ring-fenced and should be administered independently from the general revenues. This fund should be publicly accountable for its utilization and the expenditure should specifically be for the site or ecosystem that is being given compensation for. Many orders of the Tribunal have, on an ad hoc basis, indicated such fund-based arrangements. Institutionalisation of this practice by statute on a national scale, like the Superfund trust fund in the US, would materially bolster the link between finding liability and actual restoration.

C. Strengthening Execution Mechanisms

The National Green Tribunal Act should be amended in such a way that it makes the compensation orders directly executable as decrees of a civil court without any requirement of separate execution proceedings before ordinary civil courts and automatic escalating interest on unpaid compensation should also be stated in the Act which will remove the incentive for polluters to prolong litigation as a tactic for delaying and diminishing the real value of their liability. Time-bound recovery certificates similar to those in revenue recovery proceedings would have a similar effect.

D. A Differentiated Standard for Public Polluters

Due to the structural abnormality found in Part VII, distinct remedial measures for State and municipal polluters are necessary, based on binding and time-bound infrastructure directions, monitored by continuing mandamus, as opposed to undifferentiated monetary compensation from public coffers. Personal accountability mechanisms would help retain at least some of the deterrent logic of the principle when applied to public bodies. For instance, the recovery of compensation from the personal resources of responsible officials in cases of demonstrated wilful non-compliance with prior judicial directions.

E. Strengthening Regulatory Baselines and Monitoring Capacity

The polluter pays rule cannot compensate for weak underlying regulatory standards. The principle cannot operate effectively unless other instances of legal reform are also successfully implemented. First, the pollution control boards' institutional capacity must be further strengthened. This must include statutory insulation of board leadership from political interference; mandatory periodic revision of discharge and emission standards keyed to updated scientific assessment; and expanded real-time monitoring infrastructure. Also, make the data from the expanded real-time monitoring system directly admissible in evidence before the tribunal. Doing so will reduce reliance on retrospective, litigation-driven fact-finding.

F. Codifying the Causation Standard

Legislative clarification of the evidentiary standard applicable to causation in hazardous industry and pollution cases, particularly the presumptive, burden-shifting approach that courts have adopted from time to time since the Oleum Gas Leak case, would impart greater doctrinal certainty. This is especially the case in diffuse or multi-source contamination cases where courts have lacked clear guidance thus far on the workings of the presumption.

G. Enhancing Corporate Accountability Across Group Structures

An important lesson from the comparative experience under CERCLA may well be that Indian law would benefit from a codified standard for parent and successor corporate liability in environmental matters. Such a standard should straightforwardly address the kind of corporate restructuring and jurisdictional complexity that so hampered full recovery in the Bhopal litigation. So that parent and successor liability cannot be readily attenuated through corporate reorganisation, asset transfer, or change of ownership that take place after the polluting conduct.

H. Doctrinal Separation of Precaution and Liability

As per the analysis in Part VII, there should be a two-stage approach to environmental proceedings, or as suggested in EDO Qld, at least some appreciation of the distinctions between precautionary orders and grey goals on the one hand, and compensatory redress on the other. At the outset, the relief sought should be identified as either precautionary and interim in character (calling for a lower threshold) or compensatory and final in character (calling for a developed evidentiary record of causation and quantum). One possible way this two-step inquiry could be formalised, through Tribunal directions or Supreme Court appellate guidance, would be to reduce the doctrinal overlap identified in Part VII, without detracting from the substantive protection offered by either.

I. Decentralising Access to Environmental Justice

In order to respond to the access to justice deficit identified in Part VII, the Tribunal's regional bench network should be expanded; its procedural rules should be simplified for pro se or minimally represented litigants; and a dedicated mechanism for legal aid for environmental claimants should be put in place, partly funded through the restoration fund proposed above, which mirrors the logic of statutory legal aid in other areas of law. If pleadings are simplified in vernacular format and the circuit bench holds hearings in the most affected districts, it will ensure that more formal and technical character of specialised tribunal practice does not erode procedural gains of the PIL era.

IX. CONCLUSION

The polluter pays principle has come a long way from its rather modest OECD recommendation on avoiding subsidies to at least within Indian constitutional jurisprudence, has become an enforceable facet of the fundamental right to life. The judicial journey highlighted in this article, ranging from the creation of the absolute liability doctrine in the Oleum Gas Leak matter, to its explicit mention and constitutionalising in Vellore, to its institutionalisation via the National Green Tribunal, exemplifies a sustained and mostly commendable judicial effort to ensure that the injuries resulting from environmental damage are not silently offloaded on the community affected or the public exchequer.

The survey in Parts VI and VII shows that doctrinal ambition has always outstripped institutional capacity. Valuation methods are still inconsistent, mechanisms of use are still imperfect, treatments of public polluters are still structurally anomalous, compensatory and punitive rationale relations are still analytic unresolved. International experience, and particularly, the statutory precision of the European Union's Environmental Liability Directive and the developed jurisprudence of corporate liability under CERCLA in the United States, suggest that the next step in the evolution of the principle in India must be a statutory and administrative codification. The objective must be to convert a sound and well-established judicial principle into a predictable and consistently enforceable legal standard.

The proposals in Part VIII a structured tripartite methodology for compensation, a ring-fenced restoration fund, enhanced decree-level execution, a differentiated standard for public polluters, enhancement of regulatory baselines, codification of standards of causation, greater corporate accountability extending to group structures, doctrinal separation of precaution from liability, and decentralised access to environmental justice – are not suggested as a wholesale departure from existing jurisprudence. They are the natural completion of a project the judiciary itself initiated nearly four decades ago in the Oleum Gas Leak and Bichhri judgments. The legal system always provided the constitutional and other doctrinal architecture to us; what remains is for the political class and the administrative State to provide the institutional machinery which will enable this architecture to make full and reliable on-the-ground effect. The gap between the pronouncement of liability in a judgment, on the one hand, and the actual restoration of a degraded river, aquifer, or forest, on the other, must get closed as a matter of routine practice and not, as is all too often the case at present, as a matter of protracted subsequent litigation.