

Sustainability transformations, environmental rule of law and the Indian judiciary: Connecting the dots through climate change litigation

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journals.sagepub.com/home/elj**Gitanjali N. Gill** 

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Abstract

There is an urgency to address societal challenges due to earth's environmental crisis and its capacity to sustain human well-being. In this context, 'transformations towards sustainability' move to centre-stage and are increasingly institutionalised within global scientific and policy discourses. Sustainability transformations involve reorientation and restructuring of governance processes and actions. Though the governance of transformation involves multiple actors, this article examines the role of the judiciary in steering a transformation process towards a sustainable and equitable future. Judicial intervention, as a strategic tool, can effect change in human action thereby enabling transformative changes. Drawing on social science literature, the article offers a novel interdisciplinary analysis of illustrative Indian climate change legal decisions located within the sustainability transformations discourse underpinned by the environmental rule of law. The Indian judiciary, noted for expansive thinking, and acting as a 'lever of transformation', is slowly addressing climate cases. These cases categorised as – climate conscious, climate accountability and climate futurity – reflect progressive cumulative outcomes, albeit incremental, but they nevertheless enable conditions for transformative change.

Keywords

Transformations towards sustainability, climate change and Indian judiciary, climate consciousness, climate accountability, climate futurity, environmental rule of law

Introduction

There is an urgent need to respond to societal challenges due to earth's environmental crisis and its capacity to sustain human well-being. It is time to re-think our lifestyles, current production modes and consumption

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patterns to achieve sustainability. In this context, there is space to broadcast a powerful global message that moves ‘transformations towards sustainability’ to centre-stage. Increasingly, this message is institutionalised within global scientific and policy discourses.¹

The 2021 United Nations Environment Programme (UNEP) Report states system-wide transformation is the key to a sustainable future. The ‘transformation will involve a fundamental change in the technological, economic and social organization of society, including world views, norms, values and governance’.² A move towards a transformative future envisions ‘integrate[ing] people and planet across scales, and can be defined as attaining human prosperity and social inclusion within a stable and resilient earth system ... a holistic perspective helps to prevent lock-ins and mobilizes opportunities to accelerate and leverage the transformation towards sustainable development’.³ The UN 2030 Agenda for Sustainable Development envisions ‘transforming our world ... a call for action to change our world’⁴ to achieve a better and sustainable future for everyone. The sustainable development goals (SDGs) as envisaged under the 2030 Agenda seek transformation towards a better world. The SDGs, inter-related and inter-dependent, are bold, integrated, and transformative steps that balance the three dimensions of sustainable development: the economic, social, and environmental dimensions.⁵ They are structured around the five P’s – people, planet, prosperity, peace, and partnership – to shift the world onto a sustainable and resilient path.

Sustainability transformations involve reorientation and restructuring of governance processes and actions. The term governance ‘covers the whole range of institutions and relationships involved in the process of governing’.⁶ It is how ‘collective goals are chosen, decisions are made, and actions are taken to achieve those goals’.⁷ Though the governance of transformation involves multiple actors, this article examines the role of the judiciary in steering a transformation process towards a sustainable and equitable future. The judiciary is identified as a crucial partner in achieving sustainability and the SDGs. The SDGs

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1. J. Blythe et al. ‘The dark side of transformation: latent risks in contemporary sustainability discourse’ (2018) 50(5) *Antipode* 1206–1223; R. Gillard et al. ‘Transformational responses to climate change: Beyond a systems perspective of social change in mitigation and adaptation’ (2016) 7(2) *Wiley Interdisciplinary Review of Climate Change* 251–265; J. Patterson et al. ‘Transformations towards sustainability’: Emerging approaches, critical reflections, and a research agenda’ Earth System Governance Working Paper 33 (Earth System Governance Project 2015); C. Folke et al. ‘Adaptive governance of social–ecological systems’ (2015) 30(1) *Annual Review of Environment and Resources* 441–473; I. Scoones, M. Leach and P. Newell, *The politics of green transformations*. Routledge, 2015.
 2. United Nations Environment Programme, *Making Peace with Nature: A Scientific Blueprint to Tackle Climate, Biodiversity and Pollution Emergencies* (UNEP 2021) 15. Available at: <https://www.unep.org/resources/making-peace-nature> (accessed 12 February 2021). See also IPCC, *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* (IPCC 2012) 5. Available at <https://www.ipcc.ch/report/managing-the-risks-of-extreme-events-and-disasters-to-advance-climate-change-adaptation/> (accessed 3 February 2021).
 3. TWI2050 – The World in 2050, *Transformations to Achieve the Sustainable Development Goals. Report prepared by the World in 2050 initiative* (TWI2050 2018) 5. <https://iiasa.ac.at/web/home/research/twi/TWI2050.html> (accessed 12 March 2021). See also IPBES, *Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES 2019) 14. Available at: https://www.ipbes.net/sites/default/files/202002/ipbes_global_assessment_report_summary_for_policymakers_en.pdf (accessed 10 February 2021); ISSC and UNESCO, *World Social Science Report 2013: Changing Global Environments* (OECD and UNESCO Publishing) 2013.
 4. UN General Assembly Resolution 70/1, *Transforming our World: The 2030 Agenda for Sustainable Development* UN Doc. A/RES/70/1 (2015).
 5. *ibid.*
 6. A. Jordan, ‘The governance of sustainable development: taking stock and looking forwards’ (2018) 26 *Environment and Planning C: Government and Policy* 17–33, 21.
 7. B.A. Cosens et al. ‘The role of law in adaptive governance’ (2017) 22(1) *Ecology and Society* 1–12, 1.

place justice and environmental rule of law at the heart of development. SDG16 (peace, justice and strong institutions) and its target 16.3 places the judiciary as an enabler to promote the environmental rule of law and ensures equal access to justice for all. Robust judiciaries underpinned by the rule of law can ensure good governance, and achieve SDGs. Judicial intervention, as a strategic tool, can effect transformative changes through implementation, development and enforcement of environmental laws and promoting a sustainability agenda.

In this context, Indian climate change cases are employed as a case study through transformative discourse. Global north climate litigation is driven by ‘different mindsets, [comprehensive] legal and policy frameworks, and climate change challenges’.⁸ Essentially it is comprised of climate change cases that include ‘human rights arguments ... alternative strategies against “Carbon Majors” ranging from claims of nuisance to fraud and disclosure-related lawsuits ... deceptive greenwashing marketing campaigns ... and regulatory challenges to permits authorising high emitting projects’.⁹ These cases, being increasingly in the public eye, nudge shifts by key actors and thereby advance climate policies. On the other hand, climate change litigation in the global south has historically failed to address key issues that include flawed regulatory and policy regimes, governance constraints in management and enforcement, poor management of resources, and constrained political will.¹⁰ Recent trends indicate that the global south is experiencing litigation change through the lexicon of ‘climate language, human and constitutional rights, disaster management, resource conservation, and enforcement of existing environmental and planning legislation’.¹¹

However, this article diversifies and identifies a different way of approaching ‘climate litigation’¹² through the transformative dialogue. Drawing on social science literature, the article offers a novel interdisciplinary analysis of Indian judicial decisions that are located within the sustainability transformations discourse underpinned by the environmental rule of law. In essence, a sustainability agenda integrated with the elements of environmental rule of law directs incremental transformations for a sustainable future. The article is divided into five sections. First is the introduction. The second section briefly unpacks, explores

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8. Asian Development Bank, *Climate Change, Coming Soon to a Court Near You: Climate Litigation in Asia and the Pacific and Beyond* (ADB 2020) xxvi. Available at: <https://www.adb.org/publications/climate-litigation-asia-pacific> (accessed 15 March 2021).
 9. J. Setzer and R. Byrnes, *Global trends in climate change litigation: 2020 Snapshot* (London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, London School of Economics and Political Science 2020) 1-2. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2020/07/Global-trends-in-climate-change-litigation_2020-snapshot.pdf (accessed 16 February 2021).
 10. See generally, J. Setzer and L. Benjamin, ‘Climate Litigation in the Global South: Filling in Gaps’ (2020) 114 *American Journal of International Law Unbound* 56–60, 58.
 11. S. Ghosh, ‘Climate Litigation in India’ in F. Sindico and M. M. Mbengue (eds) *Comparative Climate Change Litigation: Beyond the Usual Suspects* (Springer 2021) 347–367; J. Setzer and L. Benjamin, ‘Climate litigation in the global south: Constraints and Innovations’ (2020) 9(1) *Transnational Environmental Law* 77–101; S. Ghosh, ‘Litigating Climate Claims in India’ (2019) 114 *American Journal of International Law Unbound* 45–50; J. Peel and J. Lin, ‘Transnational Climate Litigation: The Contribution of the Global South’ (2019) 113(4) *American Journal of International Law* 679–726.
 12. Acknowledging and building on the authoritative works, the term climate litigation has been used in the broadest sense to include cases relating to ‘raise material issues of law or fact relating to climate change mitigation, adaptation, or the science of climate change’, ‘cases that seek to accomplish goals arguably related to climate change adaptation or mitigation but that do not depend on the climate change dimensions of those goals’, ‘climate change cases touching all aspects of life’ and ‘use of climate language in the court judgments’. See generally, Asian Development Bank (n 8); United Nations Environment Programme, *Global Climate Litigation Report: 2020 Status Review* (UNEP and Sabin Centre for Climate Change Law 2020); J. Peel and H.M. Osofsky, ‘Climate Change Litigation’ (2020) 16 *Annual Review of Law and Social Science* 21–38; J. Setzer and L.C. Vanhala, ‘Climate change litigation: A review of research on courts and litigants in climate governance’ (2019) 10(3): e580 *Wiley Interdisciplinary Review on Climate Change*; United Nations Environment Programme, *The Status of Climate Change Litigation: A Global Review* (UNEP 2017).

and characterises the social science literature on transformations towards sustainability thereby providing a pluralist account. Section three examines the role of the judiciary in responding to the transformative agenda. The judiciary is regarded as a lever for transformative change by applying the environmental rule of law. Section four examines illustrative Indian climate case law – Supreme Court and the National Green Tribunal (NGT) – within the transformative discourse under three categories: ‘climate conscious’, ‘climate accountability’ and ‘climate futurity’. This is followed by the conclusion.

Transformations towards sustainability: Theoretical review

Defining the term

Transformation is defined as ‘physical and/or qualitative changes in form, structure or meaning-making ... can also be understood as a psycho-social process involving the unleashing of human potential to commit, care and effect change for a better life’.¹³ It involves social and technological innovations driven by multiple forms of knowledge in pursuit of desirable (sustainable) futures. It can be understood as an ‘organised, top-down managed process towards a certain goal in a given sector or as a radical, bottom-up perspective to change ... [it] includes the active construction of new practices and new meanings ... and involves an intention to change a situation to a more beneficial state’.¹⁴

Transformations are increasingly presented as a solution to environmental sustainability and societal change. Drawing on the rich academic literature, Patterson et al. define transformations towards sustainability as ‘fundamental changes in structural, functional, relational, and cognitive aspects of systems that lead to new patterns of interactions and outcomes ... It places an explicit focus on the processes of change in human society involved in moving towards more sustainable and equitable futures, which can be approached in both a normative way (e.g. as a good/desirable thing to do) as well as an analytical way (e.g. what actually “happens”, and how and why)’.¹⁵ It deals with actions that strike at the roots of unsustainability resulting in radical shifts in society’s value-normative systems and shifting relations across personal, political and practical levels simultaneously.¹⁶

Approaches

The social science literature that addresses transformations towards sustainability is both voluminous and complex. It is predominantly produced by western scholars whose work is shaped by and directed towards the interests of the global north. This literature maze is difficult to traverse and for this reason, the tabulated overview categorises how transformations towards sustainability are perceived by a range of scholars in terms of discipline, ethical positions, aims, perspectives, politics and economic interests. The conceptualisation of transformations towards sustainability encompasses the four tabulated approaches: Transitions approach, social-ecological transformations, sustainability pathways, and transformative

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13. K. O’Brien, ‘Global environmental change II: From adaptation to deliberate transformation’ (2012) 36 (5) *Progress in Human Geography* 667–676, 670.
 14. S. Grenni, K. Soini and L.G. Hørlings, ‘The inner dimension of sustainability transformation: how sense of place and values can support sustainable place-shaping’ (2020) 15 *Sustainability Science* 411–422, 412. However, for a critique on transformations, see Giuseppe Feola, ‘Societal transformation in response to global environmental change: A review of emerging concepts’ (2015) 44 *Ambio* 376–390.
 15. J. Patterson and others, ‘Exploring the governance and politics of transformations towards sustainability’ (2017) 24 *Environmental Innovation and Societal Transitions* 1–16, 2.
 16. L. Temper and others, ‘A perspective on radical transformations to sustainability: resistances, movements and alternatives’ (2018) 13 *Sustainability Science* 747–764, 751.

adaptation. Acknowledging the seminal works of Patterson,¹⁷ Bennett¹⁸ and Lam,¹⁹ independent key cataloguers, the tables offer a graphic precis of the main characteristics of sustainability transformations in various approaches, and how they are understood within the research academy and practitioners.

1. Transitions approach.²⁰

Table 1. Transitions approach.

Main characteristics	Academic works
<ul style="list-style-type: none"> • Focuses on social–technical systems in sectors including transportation, food, waste, water and energy. • Sectoral in nature and seeks sustainable production and consumption. • Transformation is understood as ‘co-evolution processes require multiple changes in socio-technical systems or configurations,’ ‘multi-actor processes,’ ‘radical shifts from one system or configuration to another,’ and ‘long-term processes’. 	Köhler 2019; Hölscher 2018; Loorbach 2017; van den Bergh 2011; Kemp and Lente 2011

Source: Author; based on the works of Patterson et al. Bennett et al. and Lam et al.

2. Social–ecological transformations.²¹

Table 2. Social–ecological transformations.

Main characteristics	Academic works
<ul style="list-style-type: none"> • Historically associated with ecology but strongly supported by social sciences (people are integral, and both affect and respond to ecosystem processes). • A place-based perspective with strong focus on social–ecological systems (e.g., forest, fishery, agriculture systems). • Based on complex adaptive systems theory that discusses resilience, adaptability, and transformability as key properties of social-ecological system. 	Olsson 2014; Folke 2010; Walker (2004); Berkes 2002; Gunderson and Holling 2002

Source: Author; based on the works of Patterson et al. Bennett et al. and Lam et al.

17. Patterson (n 15).

18. N.J. Bennett et al. ‘Just Transformations to Sustainability’ *Sustainability* (2019) 11(3881) 1–18, 3.

19. D.P.M. Lam et al., ‘Indigenous and local knowledge in sustainability transformations research: a literature review’ (2020) 25 (1)(3) *Ecology and Society* 1–27.

20. J. Köhler et al. ‘An agenda for sustainability transitions research: state of the art and future directions’ (2019) 31 *Environmental Innovation and Societal Transitions* 1–32; K. Hölscher, J.M. Wittmayer and D. Loorbach, ‘Transition versus transformation: What’s the difference?’ (2018) 27 *Environmental Innovation and Societal Transitions* 1–3; D. Loorbach, N. Frantzeskaki and F. Avelino, ‘Sustainability transitions research: Transforming science and practice for societal change’ (2017) 42(1) *Annual Review of Environment and Resources* 599–626; J.C.J.M van den Bergh, B. Truffer and G. Kallis, ‘Environmental innovation and societal transitions: introduction and overview’ (2011) 1 *Environmental Innovations and Societal Transitions* 1–23; R. Kempa and H. van Lente, ‘The dual challenge of sustainability transitions’ (2011) 1(1) *Environmental Innovation and Societal Transitions* 121–124.

21. P. Olsson, V. Galaz and W.J. Boonstra, ‘Sustainability transformations: a resilience perspective’ (2014) 19 (4)(1) *Ecology and Society*; M. Cote and A.J. Nightingale, ‘Resilience thinking meets social theory: situating social change in socio-ecological

3. Sustainability pathways.²²**Table 3.** Sustainability pathways.

Main characteristics	Academic works
<ul style="list-style-type: none"> • Focuses on human development while often taking a contextually grounded sustainable development perspective. • Analyses the governance aspects of transformations; deals with contested values, narratives of change, and the politics of knowledge, and 'putting institutions and politics centre stage'. • Incorporates insights from social–ecological resilience thinking on planetary boundaries. 	Scoones 2015; Stirling 2014; Leach et al. 2013; Leach 2012, 2007

Source: Author; based on the works of Patterson et al. Bennett et al. and Lam et al.

4. Transformative adaptation.²³**Table 4.** Transformative adaptation.

Main characteristics	Academic works
<ul style="list-style-type: none"> • Transformative adaptation is inherently linked to framings of vulnerability that recognise its social, political and cultural roots. • An emerging perspective arising particularly in response to vulnerability and equity concerns linked to climate change. • Focuses on power issues within transformative processes as an adaptive response to climate change and aims to provide opportunities and possibilities for vulnerable groups. 	Pelling, O'Brien and Matyas 2014; O'Brien 2011; Pelling 2011.

Source: Author; based on the works of Patterson et al. Bennett et al. and Lam et al.

Thus, these tabulated approaches of academic scholarship often overlap but also have distinctive characteristics that inform strategies and actions for sustainable transformation. These provide a conceptual understanding of sustainability transformations as 'nonlinear, complex, long-term, multilevel, multiphase and cross-scale processes'.²⁴

systems (SES) research' (2012) 36 *Progress in Human Geography* 475–489; C. Folke et al., Resilience thinking: integrating resilience, adaptability and transformability (2010) 15 (4) *Ecology and Society*; B. Walker et al., 'Resilience, adaptability and transformability in social-ecological systems' (2004) 9 (2) 5 *Ecology and Society*; F. Berkes, J. Colding, and C. Folke, *Navigating social-ecological systems: building resilience for complexity and change* (CUP 2002); L.H. Gunderson and C.S. Holling, *Panarchy: understanding transformations in human and natural systems* (Island Press 2002).

22. Scoones (n 1); Andy Stirling, 'Emancipating Transformations: From Controlling 'The Transition' to Culturing Plural Radical Progress' (2014) STEPS Working Paper 64 (STEPS Centre, Brighton); M. Leach, K. Raworth, and J. Rockström, 'Between social and planetary boundaries: navigating pathways in the safe and just space for humanity' in *ISSC/UNESCO World Social Science Report 2013: Changing Global Environments* (OECD and UNESCO Publishing 2013); M. Leach et al. 'Transforming innovation for sustainability' (2012) 17(2)(11) *Ecology and Society*; M. Leach et al. 'Understanding Governance: Pathways to Sustainability' (2007) STEPS Working Paper 2 (STEPS Centre, Brighton).

23. M. Pelling, K. O'Brien and D. Matyas, 'Adaptation and transformation' (2014) 133(1) *Climatic Change* 113–127; O'Brien (n 13); M. Pelling, *Adaptation to Climate Change: From Resilience to Transformation* (OUP 2011).

24. Lam (n 19) 2.

Incremental or radical transformations: The debate

Transformations can be stimulated through incremental or radical change. These matters have generated a body of active discordant opinion and literature, but that debate extends beyond the scope of this article.²⁵ Incremental change represents ‘small adjustments made in response to perceived or expected changes’²⁶ or ‘slow, step by step, short term changes’²⁷ and ‘when effective, do not necessarily stay small ... indeed, they can amplify and cumulate into large-scale change’²⁸ having systemic outcomes. Lindblom states ‘a fast-moving sequence of small changes can more speedily accomplish a drastic alteration of the status quo than can an only infrequent major policy change’.²⁹ Radical change focuses on ‘alterations that have systemic consequences and are considered as structural shifts that challenge our assumptions, beliefs, and values, along with government regimes, development paradigms, and power relations’.³⁰

In sustainability transformations discourse, radical actions are prioritised over incremental action. Incremental actions are considered insufficient to achieve the desired goals due to ‘lack of goal orientation, conservatism, limited applicability, unconductiveness to analysis’³¹ and being ‘shallow, partial and slow’.³² Temmer states ‘changing the system by adding or adjusting some instruments, processes, or structures, without altering the taken-for-granted frames of reference, is deemed insufficient’.³³ However, the realities of actioning in-depth, quick and large-scale radical changes are not easy. Radical changes can be reactive, resisted and trigger organisational crisis thereby creating discontinuity.

Despite increasing interest in western societies for radical change, the position differs in developing and emerging economies. The questions about ‘which transformation? for whom? and by whom?’³⁴ are of particular relevance within these economies. High population densities and basic human needs create complex transformational challenges to reconfigure the relationship between nature, people, resource consumption and emissions.³⁵ Further, ill-functioning institutions (formal and informal) restrict the well-being of the majority and enhance the benefits of a small minority.³⁶ An instance of the ill-functioning institutions is the under-developed coordination and weak synergies between regulatory bodies and their operational processes that include human and technical capacity constraints.

In this context, Patterson’s position of integrating incremental change within the transformative agenda provides a middle ground. A ‘normative focus on sustainability transformations helps to orient incremental

25. C.J.A.M. Termeer, A. Dewulf and G. Robbert Biesbroek, ‘Transformational change: governance interventions for climate change adaptation from a continuous change perspective’ (2017) 60(4) *Journal of Environmental Planning and Management* 558–576; R.W. Kates, W.R. Travis and T.J. Wilbanks, ‘Transformational adaptation when incremental adaptations to climate change are insufficient’ (2012) 109(19) *Proceedings of National Academy Science USA* 7156–7161; S. Park, S.M. Howden and S. Crimp, ‘Informing regional level policy development and actions for increased adaptive capacity in rural livelihoods’ (2012) 15(1) *Environmental Science and Policy* 23–37.

26. European Environment Agency, *Perspectives on Transitions to Sustainability* (EEA Report 25/2017 2018) 32.

27. Termeer (n 25) 563.

28. *ibid* 564.

29. C. Lindblom, ‘Still Muddling, Not Yet Through’ (1979) 39(6) *Public Administration Review* 517–526, 520.

30. Bennet (n 18) 2.

31. Patterson (n 15) 4.

32. Termeer (n 25) 561.

33. *ibid*.

34. M. Ramos-Mejía, M.-L. Franco-García and J.M. Jauregui-Beckerb, ‘Sustainability transitions in the developing world: Challenges of socio-technical transformations unfolding in contexts of poverty’ (2018) 84 *Environmental Science and Policy* 217–233, 217.

35. United Nations. *Transformations for Sustainable Development: Promoting Environmental Sustainability in Asia and the Pacific* (UN ESCAP, UNEP, United Nations University and the Institute for Global and Environmental Strategies 2016) 14.

36. *ibid*.

efforts within a broader narrative of transformative change'.³⁷ Patterson citing Weick states 'small wins ... identifying, gathering, and labelling several small changes that are present ... small to moderate changes could have the potential to cumulate into more substantial transformation over time'.³⁸

The authors agree with Patterson and advocate a middle path for developing economies. Change does not mean 'massively or quickly but it could be a product of incremental but cumulative changes ... moving society along pathways toward a sustainable future that will vary across nations, regions and contexts, including through existing institutions and policy approaches'.³⁹ Domestic and localised incremental sustainability responses in developing economies could trigger cumulative, manageable transformational changes. Required responses could include understanding (values, principles, and institutions including the social context limitations that underlie the transformative process); determination of the current ground realities; creating and developing the capabilities to change (for example technological innovation and leadership) and implementing and monitoring the preferred solution. Thus, a move towards a sustainable future involves 'connect[ing] long-term normative sustainability goals with the realities of incremental decisions in the present'.⁴⁰

Governance for transformations, judiciary and the environmental rule of law

Governance, operating at multilevels, involving multiple actors, includes structures and processes for policy and decision-making, exercising responsibility and ensuring accountability.⁴¹ The popular usage of the term governance has resulted in multiple definitions.⁴² However, in this article, the focus is on the role of the judiciary regarding the transformative process.

From a normative perspective, governance has been used 'as something which should be adopted to achieve some preferred end point ... one of the most well-known formulations is that of "good governance" ... associated with an efficient public service, an independent judiciary, a respect for law and order, as well as human rights'.⁴³ The judiciary is guided by a collective vision as the guardian of the rule of law. Justice Weeramantry in his commentary on the Bangalore Principles of Judicial Conduct observed 'a judiciary of undisputed integrity is the bedrock institution essential for ensuring compliance'.⁴⁴ The rule of law is a dynamic and multifaceted concept intricately interlinked with values including dignity, freedom, fairness, justice, democracy and human rights. The judiciary as an independent institution, weaves together the above-mentioned values to ensure solidarity, respect for all and shared responsibility.

The etymological creation of the term 'environmental rule of law' by UNEP's Governing Council Decision 27/9 in February 2013 reinvigorated the integration of the rule of law in environmental matters

37. Patterson (n 15) 4.

38. *ibid.* See also A. Grunwald, 'Working Towards Sustainable Development in the Face of Uncertainty and Incomplete Knowledge' (2017) 9(3–4) *Journal of Environmental Policy & Planning* 245–262.

39. UNEP 2021 (n 2) 101.

40. Patterson (n 15) 4.

41. *ibid.* 3; Jordan (n 6) 22.

42. For example, see F. Biermann et al. Earth system governance: a research framework (2010) 10 *International Environmental Agreements* 277–298, 279. Earth System Governance Framework (ESGF) defines governance as 'the interrelated and increasingly integrated system of formal and informal rules, rule-making systems, and actor-networks at all levels of human society (from local to global) that are set up to steer societies towards preventing, mitigating, and adapting to global and local environmental change and, in particular, earth system transformation, within the normative context of sustainable development.'

43. Jordan (n 6) 23.

44. United Nations, *Commentary on the Bangalore Principles of Judicial Conduct* (UN 2007) 5. The Bangalore Principles highlight seven core values: independence, impartiality, integrity, propriety, equality, competence, and diligence.

to reduce the violation of environmental law and achieve sustainable development.⁴⁵ The 2019 UNEP Report recognises the environmental rule of law as ‘offer[ing] a framework for addressing the gap between environmental laws on the books and in practice and is key to achieving the Sustainable Development Goals ... institutions [judiciary] are key drivers of sustainable development’.⁴⁶ The environmental rule of law is no longer an option but a prerequisite without which equitable economic growth, inclusive social development and environmental sustainability are unachievable. The 2030 Agenda places justice and the environmental rule of law at the heart of development. Within the justice element, especially SDG16 (target 16.3), access to fair justice systems and accountable institutions of democratic governance are integral to achieving sustainable development. In this context, the environmental rule of law is present in institutional values and practices.

The 2021 UNEP report states ‘transformative systemic change is prerequisite for a sustainable future’.⁴⁷ The role of the judiciary as drivers of sustainability transformations is based on the environmental rule of law that places society on a sustainable trajectory. As a dynamic adjudicatory forum, the judiciary by locating sustainability under the spotlight contributes in two ways towards transformational change. First, the traditional law enforcement and compliance process wherein the power of legitimacy, and high standards of accountability and transparency are important elements that influence sustainability transformations. The judiciary’s contribution to the transformative agenda is by ‘bolster[ing] environmental laws and policies and strengthen the rule of law by ensuring consistent enforcement of all laws, including by eliminating corruption and strengthening institutions such as independent judiciaries’.⁴⁸ Thus, the advancement of sustainability is dependent upon the effective implementation and enforcement of environmental laws.

Second, the judiciary through the ‘culmination of many seemingly small but strategic actions’⁴⁹ implement a powerful sustainability agenda that directs transformative change. A ‘people and planet centred perspective’⁵⁰ employing synergetic⁵¹ and ‘holistic’⁵² approaches support the sustainability agenda in judicial decision-making. The affirmation, adoption and scaling up of sustainability decisions by the judiciary help the move towards transformational change. These include achieving good life and well-being, sustainable consumption and production patterns, values of responsibility, decarbonisation, externalities, reduced inequalities and technological innovation.⁵³

In this context, the judiciary acts as a proactive and incremental facilitator in actioning the environmental rule of law to further transformational sustainability. Thus, the environmental rule of law is ‘incremental and progresses nonlinearly’.⁵⁴ It ‘integrates critical environmental [sustainable] needs with the elements of rule of law [fair, just and accountable laws], thus creating a foundation for environmental [sustainability]

45. United Nations Environment Programme, *Decision 27/9: Advancing justice, governance and law for environmental sustainability* (UNEP 2013). Available at: <https://wedocs.unep.org/bitstream/handle/20.500.11822/17292/K1350945.pdf?sequence=3&isAllowed=y> (accessed 15 December 2020) 35–35. See also Global Symposium on Environmental Rule of Law <https://www.unep.org/ru/node/6492> (accessed 20 January 2021); United Nations Environment Programme, *Advancing Justice, Governance and Law for Environmental Sustainability* (UNEP 2012).

46. United Nations Environment Programme, *Environmental Rule of Law: First Global Report* (UNEP 2019) 8, 38.

47. UNEP 2021 (n 2) 101.

48. *ibid* 103.

49. *ibid*.

50. TWI2050 (n 3) 5.

51. *ibid* 12. Synergetic approach ‘truly integrates all possible domains affected, focuses on trade-offs and co-benefits ... strives to harness science, technology, and innovation (STI) to accelerate progress’.

52. *ibid* 12. Holistic approach implies ‘full complexity of the dynamics involved in each domain of social, social–environmental, and social–environmental–technological interaction – from the basic values and world view of individual societies and cultures, to their ways of interacting, their institutions, their governance ... will play out and impact on every aspect of present and future societies’.

53. See generally, UNEP 2021 (n 2) 102.

54. UNEP 2019 (n 46) 28.

governance that protects rights and enforces fundamental obligations'.⁵⁵ By addressing the range of environmental sustainability challenges including climate change, biodiversity loss and soil degradation, the environmental rule of law has moved from 'obscurity to ubiquity'.⁵⁶

Indian judiciary, climate change and transformations

This section analyses India's climate change litigation and the role of its judiciary in the context of sustainability transformations. The article neither delineates climate change cases comprehensively nor chronologically. Instead, it focuses on illustrative Indian cases that contribute to an understanding and evaluation from the transformative perspective.

The discourse on transformations as a pressing societal response with respect to climate change is intensifying. Transformational change requires urgent and systemic societal changes to produce far-reaching solutions that meet the Paris Agreement 1.5C reduction targets. Envisioning and shaping a shift towards more ambitious mitigation and adaptation efforts in climate change requires improved governance interventions. In this context, strategic interventions from the judiciary help realise this vision.

Before reviewing the Indian judiciary, the global perspective of judicial responses within climate governance is visited albeit briefly. In essence judicial participation is recognised as vital for promoting sustainable futures and proactively facilitating transformational outcomes. According to Justice Benjamin, the involvement of the judiciary in addressing climate change is important for four reasons. First, the pragmatic argument assumes 'no substitute exists for court system ... the lack of other or better alternatives makes courts an inevitable choice'.⁵⁷ Second, excluding climate change would 'handicap and ossify environmental jurisdiction, transforming it into a body without its heart and preventing the legal system's evolution in a world of rapid transformations'.⁵⁸ Third, creating spaces for meaningful intervention by the courts would complement their role in the societal transformation. Fourth, climate litigation cuts across environmental matters such as environmental impact assessments (EIAs), protected areas, deforestation, water resources, wetlands, and desertification and hence cannot be ignored.

Similarly, Chief Justice Brian Preston argues as an independent and critical pillar of the government the judiciary can contribute in at least nine ways to solving the problem of climate change.⁵⁹ These include 'providing equal access to justice; determining and not deferring climate change claims; upholding the rule of law; taking and forcing the executive, legislature and private sector to take climate change seriously; explaining and upholding the fundamental values underpinning the law; promoting environmental values and putting a price on them; assisting the progressive and principled development of climate change law and policy; and making reasoned and evidence-based decisions'.⁶⁰ In this context, specialised trained, motivated and resourced judges play an important role in gaining better climate outcomes and governance thereby promoting rule of law. For Justice Mansoor Ali Shah, the role of courts is significant in developing a common language to 'build a global judicial consensus on climate justice'.⁶¹ Learning from each other through their sound judgements, according to Lord Carnwath, is the way forward to address the global challenge of climate change.⁶²

55. *ibid* 8.

56. *ibid* p 9.

57. ADB 2020 (n 8) x.

58. *ibid*.

59. B.J. Preston, 'The contribution of the courts in tackling climate change' (2016) 28 *Journal of Environmental Law* 11–17.

60. *ibid*.

61. ADB 2020 (n 8) xv.

62. *ibid* xii.

In recent times, scholarly works, international reports and institutions identify increasing climate litigation and judicial responses to the global discourse on climate jurisprudence.⁶³ Illustrative global climate change thematic litigation focuses on issues of rights based litigation (including issues of standing, right to a healthy life and environment, intra- and inter-generational equity, public trust doctrine and rights of nature),⁶⁴ enforcement of statutory and executive commitments relating to climate change,⁶⁵ adaptation and its impacts,⁶⁶ corporate liability and responsibility especially the fossil fuel producers⁶⁷ and climate vulnerability including indigenous communities, women and children.⁶⁸

Indian judiciary and climate change through a transformative discourse

A brief scene-setting account regarding India's commitment to tackle climate change reflects action and progress. The government's response to the call for collective action is evidenced by three integrated initiatives. These are transformative and accelerated changes that include low-carbon shifts across several sectors, re-configuring technology and institutional mechanisms for holistic outcomes, and mutually reinforcing well-defined policies.⁶⁹ India's commitments by 2030 include voluntary reduction of emissions, some 40% cumulative electric power installed capacity from non-fossil fuel energy resources, and the creation of an additional carbon sink of 2.5–3 billion tonnes of CO₂ equivalent through forest cover.⁷⁰

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63. UNEP 2020 (n 12); UNEP 2017 (n 12); ADB 2020 (n 8); B.J. Preston, 'The influence of the Paris Agreement on Climate Litigation: Legal Obligations and Norms (Part I)' (2020) *Journal of Environmental Law* 1–33, and 'The influence of the Paris Agreement on climate litigation: causation, corporate governance and catalyst (Part II)' (2020) *Journal of Environmental Law* 1–32; B. Mayer, 'The state of the Netherlands v. Urgenda foundation: ruling of the court of appeal of The Hague (9 October 2018)' (2019) 8(1) *Transnational Environmental Law* 167–92; J. Peel and H.M. Osofsky 'A rights turn in climate change litigation?' (2018) 7(1) *Transnational Environmental Law* 37–67; G. Ganguly, J. Setzer and V. Heyvaert, 'If at first you don't succeed: suing corporations for climate change' (2018) 38(4) *Oxford Journal of Legal Studies* 841–68; Sabin Centre for Climate Change; Ecolex; Pacific Islands Legal Information Institute.
64. *Juliana v. United States* No. 18-36082 (9th Cir. Jan. 17, 2020); *Youth Verdict v. Waratah Coal* [2020] QLC 33 (Australia); *Urgenda Foundation v. The State of The Netherlands* The Supreme Court of the Netherlands, Case No. 19/00135 (20 December 2019); *Laghari v. Federation of Pakistan* PLD (2018) Lahore 364; *Advocate Padam Bahadur Shrestha vs Prime Minister and Office of Council of Ministers* Case No. 074-WO-0283, Supreme Court of Nepal (December 2018); *Washington Environmental Council v. Bellon* 732 F.3d 1131 (9th Cir. 2013).
65. *Greenpeace Nordic Association v. Ministry of Petroleum and Energy* (January 23, 2020), 18-060499ASD-BORG/03 (Nor.); *Friends of the Irish Environment CLG v. Government of Ireland* [2020] IESC 49; *Gloucester Resources Limited v. Minister for Planning* [2019] NSWLEC 7; *Sheikh Asim Farooq v. Federation of Pakistan* (2018) W.P. No. 192069/2018; *Letter of Formal Notice to Officials, Notre A aire à Tous and Others v. France* (filed December 17, 2018).
66. *Petition of Torres Strait Islanders to the United Nations Human Rights Committee Alleging Violations Stemming from Australia's Inaction on Climate Change* (accessed 29 March 2021); *Philippi Horticultural Area Food & Farming Campaign v. MEC for Local Government Environmental Affairs and Development Planning: Western Cape*, No. 16779/17 (High Ct. Cape Town Div. February 17, 2020); *Conservation Law Found. v. ExxonMobil Corporation* No. CV 16-11950-MLW, 2019 WL 7598579, Complaint (May 6, 2019).
67. *Smith v. Fronterra Co-Operative Group Limited* [2020] NZHC 419; *State v. American Petroleum Institute* No. 62-CV-20-3837 (Minn. 2nd Dist. Ct. June 24, 2020); *City & County of Honolulu v. Sunoco LP* No. 1CCV-20-0000380 (Haw. 1st Cir. Ct. March 9, 2020); *Mayor & City Council of Baltimore v. BP P.L.C.* No. 24-C-18-004219 (Md. Cir. Ct. July 20, 2018); *Rhode Island v. Shell Oil Products Co.* No. PC-2018-4716 (R.I. Super. Ct. July 2, 2018).
68. *Maria Khan v. Pakistan* Writ Petition No. 8960 of 2019, High Court of Lahore; *Ali Steel Industry v. Government of Khyber Pakhtunkhwa* 2016 CLD 569; *Petition to the Inter-American Commission on Human Rights Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the United States* (Inter-Am. Comm'n H.R. filed 2005); *BELA v. Bangladesh* WP No. 57 of 2010, D-/01-02-2012.
69. Ministry of Environment, Forest and Climate Change (Government of India), *India: Second Biennial Update Report to the United Nations Framework Convention on Climate Change* (MoEFCC 2018) 228.
70. India's intended Nationally Determined Contribution: Working towards Climate Justice (2015). Available at: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/India%20First/INDIA%20INDC%20TO%20UNFCCC.pdf>; Climate Action Tracker

India does not have comprehensive climate legislation though several environmental acts address different facets of climate change.⁷¹ India's record as a progressive jurisdiction in environmental matters through its proactive judiciary is internationally recognised.⁷² However, in climate change litigation, climate concerns are peripheral and usually driven by the use of climate language, human and constitutional rights jurisprudence, and enforcement of existing environmental laws.⁷³ In contrast, the authors present an alternative rationale for India's climate litigation. The authors introduce three categories of Indian climate change cases identified within sustainability transformations discourse founded on the environmental rule of law. These are 'climate conscious', 'climate accountability' and 'climate futurity'. This novel approach realises and melds climate change commitments within the SDGs agenda.

Independent, strong, and specialised judiciaries can provide steadfast foundations in climate change litigation. They accelerate incremental but cumulative structural changes towards sustainability transformations. Accordingly, the judiciary acts as a 'lever of transformation',⁷⁴ to advance the environmental rule of law in climate cases. This includes implementing and enforcing clear, unambiguous laws; strengthening environmental legislation; ensuring accountability and transparency of the public authorities in their decision-making process; participatory cross-sectoral coordination of different stakeholders in their clear and coordinated mandates and roles in decision-making; and placing sustainability and SDGs at the centre of judicial decision-making thereby leaving no one behind.

Examples of judicial leverage include the right to a healthy environment; addressing planetary emergencies and human well-being together; enforcing Paris Agreement commitments towards emission reductions and low-carbon economy; accounting for nature by internalising externalities in decision-making; displacing unsustainable practices; compliance of environmental taxes, subsidies and market instruments such as carbon credits; and implementing and enforcing energy regulations, renewable energy targets and infrastructure for electric vehicles.⁷⁵ Thus, the paramount goal of the environmental rule of law is to 'change behaviour onto a course toward sustainability by creating an expectation of compliance with environmental law'.⁷⁶

The authors argue that the Indian judiciary through a step-change or a small win process underpinned by the environmental rule of law contributes towards an evolving climate change transformation. For example, Justice Chandrachud in an illuminating 2021 Supreme Court judgement states 'environmental rule of law seeks to create essential tools – conceptual, procedural and institutional to bring structure to the discourse on environmental protection [including climate change]. It does so to enhance our understanding of environmental challenges – of how they have been shaped by humanity's interface with nature in the past, how they continue to be affected by its engagement with nature in the present and the prospects for the future, if we to radically alter the course of destruction which humanity's actions have charted'.⁷⁷ This step-change process has been described by Lindblom as 'incremental steps can be made quickly because they are only

2020 India Pledges and Targets. Available at: <https://climateactiontracker.org/countries/india/pledges-and-targets/> (accessed 28 March 2021). In December 2020, India established the Apex Committee for the Implementation of the Paris Agreement (AIPA) to generate coordinated response on climate change matters.

71. The acts include water, air and environment, electricity and energy efficiency, disaster management and forests. See also, C. Bhushan and T. Gopalakrishnan, *Environmental laws and climate action: A case for enacting a framework climate legislation in India* (International Forum for Environment, Sustainability and Technology 2021).

72. G.N. Gill, *Environmental Justice in India: The National Green Tribunal* (Routledge 2017) 39–41.

73. Gosh 2019 (n 11) 45; Peel and Lin (n 11) 683.

74. UNEP 2021 (n 2) 103.

75. *ibid* 133.

76. UNEP 2019 (n 46) 13.

77. *Himachal Pradesh Bus Stand Management and Development Authority v. Central Empowered Committee* 2021 SCC OnLine SC 15, para 52.

incremental. They do not rock the boat, do not stir up the great antagonisms and paralysing schisms, as do proposals for more drastic change'.⁷⁸ To facilitate this, it is necessary that these are not aspirational metaphors but within a developing economy are firmly grounded and realised in present realities and desirable futures.

Based upon this background, the authors' categorisation being 'climate conscious', 'climate accountability' and 'climate futurity' contribute to creating sustainable niches for an 'incremental but cumulative changes'⁷⁹ move towards transformation as discussed below.

Climate conscious

Mary Robinson, the former Irish President, and also Ban Ki Moon's special envoy for climate change, employed a 'climate conscious' approach to climate disruptive challenges.⁸⁰ According to Robinson, climate consciousness required 'to get ourselves into a 1.5 °C mindset it means to limit warming to 1.5 °C'.⁸¹ Essentially, the approach focuses on heightened awareness that helps us understand, identify and respond to the root causes that generate and reproduce climate crisis. Thus, climate consciousness is a prerequisite to drive a transformational change by recognising the reality rather than the perception of an immediate climate threat,⁸² and 'rethinking actions in light of the climate challenge ... and is useful in considering the responses to disruptive climate'.⁸³

As a continuous and relational approach, the development of climate consciousness requires mindful engagement with the seriousness of climate challenges and helps frame transformational responses. For Preston CJ, adopting a climate-conscious approach 'involves identifying the climate change issues and consequences of different courses of action and incorporating these into the preferred solution to the legal problem or dispute'.⁸⁴ Judicial responses provide forward-looking, systemic, and long-term guidance that identify causes and impact but also develop a holistic approach to achieving sustainability and SDGs within climate change. For example, these include redefining our relationship with nature. This reset would avoid climate disaster, address climate change crisis and human well-being needs in tandem, and direct the adoption of tangible steps, including commitments and targets under international legal instruments, adaptation, and mitigation measures, to address climate risks. In these incremental sustainability responses, shared values and concerns help develop 'collective connection with the notions of "climate change" and "climate justice" ... [thereby] raising climate consciousness'.⁸⁵

In a broader sense, climate consciousness connects global climate problems with their local consequences through the paradoxical feelings of 'externalisation'⁸⁶ and 'leave no one behind'.⁸⁷ 'Externalisation', a negative and feeling of despair, is associated with the 'dialectic of environmental

78. Lindblom (n 29) 520.

79. UNEP 2021 (n 2) 101.

80. Simon Kerr and Christine Parker, 'Making climate real: Climate consciousness, culture and music' (2019) 30(2) *King's Law Journal* 185–193, 187.

81. <https://theconversation.com/mary-robinson-climate-justice-must-play-a-key-role-in-the-paris-agreement-56343> (accessed 20 March 2021).

82. J. Williams and S. Parkman, 'On humans and environment: The role of consciousness in environmental problems' (2003) 26 *Human Studies* 449–460, 457.

83. Kerr and Parker (n 80) 187.

84. B.J. Preston, 'Implementing a climate conscious approach in daily legal practice' (Public seminar Faculty of Laws, University of College London 11 February 2020).

85. Kerr and Parker (n 80) 191.

86. Williams and Parkman (n 82) 452.

87. UN General Assembly Resolution (n 4).

[climate] destruction ... crisis of consciousness also serves as a motivation for social action and the transformation of the environment. To be conscious is to also be conscious of one's own death. Knowledge of our own death brings a tremendous concern'.⁸⁸ Contrarily, the positivity and hope of leave no one behind in the SDGs are based on the consciousness of integration, indivisibility and universality. It raises awareness that climate sustainability implies 'heal and secure our planet and shift the world on a sustainable and resilient path'.⁸⁹ Thus, climate consciousness, through conflicting emotions, builds a wish for collective action to avoid the tragedy of the commons. In this context, the judiciary 'can and do play a useful role in developing the law and contributing to a change of [climate] consciousness, and these developments can in turn catalyse new and needed actions: by states, international organisations, private sector, NGOs, and individuals'.⁹⁰ This, in turn, creates 'security, stability, and a willingness to accept law'⁹¹ that promotes a climate sustainability course thereby building legitimacy both in the judiciary and in the environmental rule of law.

An emerging trend in Indian decisions reflects the spirit of climate consciousness. For example, in *Ajay Khera v. Container Corporation of India*⁹² the NGT employed the concept of carrying capacity as a yardstick of sustainability to raise climate consciousness. The tribunal through the sustainable development vision held that consciousness requires meaningful commitment by devising measures in climate capacity to restrict overuse of natural resources on reaching optimum capacity. The concept of carrying capacity, originally developed by ecologists, means the maximum number or density of individuals of a population that a specific area can sustainably support. It is an essential 'tool for sustainable development of human settlements especially in the face of the serious environmental degradation of air, water, and land ... a threshold level of anthropopressure, which the environment is able to balance and withstand without irreversible changes and serious degradation'.⁹³ To tackle climate change and realise the SDGs, there is an imperative need to develop long-term assessments of physical and environmental carrying capacity. In this case, the NGT directed the regulatory authorities to carry out capacity assessments in 102 'non-attainment cities' relating to air pollution.⁹⁴ The assessment includes the number of vehicles, population, and extent of different activities including institutional, industrial and commercial. This helps develop policy decisions for comprehensive sustainability actions to combat air pollution in the interest of public health.

Livestock is a major source of methane emissions.⁹⁵ Methane has a warming potential 20 times higher than carbon dioxide. By consciously framing a direct link between methane emissions and livestock, the NGT raised awareness by constructing a climate sustainability narrative to adopt safeguards that are necessary to protect the environment and public health. In *Nuggehalli Jayasimha v. Government of Delhi*⁹⁶ the NGT examined the climatic impact of the dairy livestock. Referring to a 2018 study, the NGT observed Indian livestock emitted 15.3 million tonnes of methane in 2012 and has the potential

88. Williams and Parkman (n 82) 452.

89. UN General Assembly Resolution (n 4).

90. P. Sand, 'Climate Change and the Rule of Law: Adjudicating the Future in International Law' (Public Lecture United Kingdom Supreme Court 17 September 2015).

91. UNEP 2019 (n 46) 40 and 42.

92. 2019 SCC OnLine NGT 1346 and 2018 SCC OnLine NGT 2188.

93. M. Świąder, S. Szewrański and J.K. Kazak, 'Foodshed as an Example of Preliminary Research for Conducting Environmental Carrying Capacity Analysis' (2018) 10(3):882 *Sustainability* 1-22, 2.

94. Cities are identified as 'non-attainment' if they do not meet the National Ambient Air Quality Standards for particulate matter and nitrogen oxide over a 5 year period.

95. United Nations Environment Programme and Climate and Clean Air Coalition, *Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions* (UNEP 2021) 25.

96. 2020 SCC OnLine NGT 513.

to increase surface temperatures up to 0.69 mk over a period of 20 years. Accordingly, the NGT directed the central pollution control board (CPCB) to develop an evidence-based, livestock-methane inventory for dairies throughout India and lay down sustainability indicators as guidelines for the management and monitoring of livestock farming.

Climate consciousness is again evidenced in forest-related cases. The judicial decisions reflect a sense of awareness, connection, and responsibility towards the importance of forests and their protection to maintain ecological sustainability in the biosphere. In *Court on its own motion v. State of Himachal Pradesh*⁹⁷ the NGT contextualised the illegal felling of trees and its adverse contribution to deforestation including the destruction of carbon sinks, animal habitats and medicinal plants; global warming; and soil erosion. By highlighting the severity of climate change impact, the tribunal engaged with deep and complex inter-dependent sustainability domains. Similarly, in *Rajiv Dutta v. Union of India*⁹⁸ the NGT observed emissions from forest fires contribute to climate change by increasing concentrations of greenhouse gases and changing the earth's albedo by depositing more light-absorbing particles such as black carbon.⁹⁹ The case related to large scale and uncontrolled forest fires ravaging the States of Uttarakhand and Himachal Pradesh thereby undermining the ecological sustainability of an already endangered biological zone. The NGT directed the central and respective state governments to formulate national policy and guidelines for forest fire prevention and control.

*Durga Dutt v. State of Himachal Pradesh*¹⁰⁰ illustrates climate impact on glaciers. To experience 'requires awareness or consciousness'¹⁰¹ and contemplate measures in the light of climate challenge. The facts of the case related to environmental degradation and damage to the glacier of the Rohtang Pass Valley, known as the 'Crown Jewel of Tourism in India'. Global warming has a direct impact on the environment and ecology of any zone. Rohtang Pass, being one of the eco-sensitive and fragile areas of the glacier, has retreated due to the black carbon effect. Accordingly, the tribunal ordered the regulatory authorities to evolve specific guidelines and measures to take greater care of the glacier in the interest of sustainability, sustainable development, and ecological balance.¹⁰²

Climate consciousness is further evidenced when the NGT advanced the adoption of India's National Action Plan on Climate Change (NAPCC) that promotes 'development objectives while also yielding co-benefits for addressing climate change effectively'.¹⁰³ In *Gaurav Bansal v. Union of India*¹⁰⁴ the NGT directed state governments to submit their climate action plans in consonance with NAPCC and obtain approval from the Environment and Climate Change Ministry. The tribunal also expressed its willingness to entertain specific cases regarding violation of the NAPCC, its impact, or consequences.¹⁰⁵

97. NGT order dated August 1, 2017.

98. 2017 SCC OnLine NGT 30.

99. *ibid* para 82.

100. NGT order dated February 6, 2014.

101. Kerr and Parker (n 80) 187.

102. The measures included restricted vehicular traffic, the introduction of stringent vehicular emission norms, the use of clear natural gas and alternative environmentally friendly fuels, prohibiting the carrying and use of plastic bags and littering of any kind, and no commercial activity at the glacier.

103. SDGs Knowledge Platform, *India: National Action Plan on Climate Change*. Available at: <https://sustainabledevelopment.un.org/index.php?page=view&type=99&nr=9&menu=1449> (accessed 27 March 2021).

104. NGT order dated 23 July 2015.

105. *Gaurav Bansal v Union of India* 2016 SCC OnLine NGT 593. See also *Riddhima Pandey v Union of India* NGT Order dated 15 January 2019 wherein the adequacy of climate change mitigation efforts was raised. However, the NGT refused to entertain the petition and stated 'there is no reason to presume that Paris Agreement and other international protocols are not reflected in the policies of the Government of India or are not taken into consideration in granting environment clearances' (para 3).

Climate accountability

Accountability, a virtuous but contested concept calls for powerful institutions and authorities to be accountable to their public.¹⁰⁶ It is a ‘relationship between an actor and a forum, in which the actor has an obligation to explain and justify his or her conduct, the forum can pose questions and pass judgement, and the actor may face consequences’.¹⁰⁷ The quintessence of accountability is based on ‘answerability’,¹⁰⁸ and ‘enforceability’,¹⁰⁹ in matters of public purpose or interest in the ‘public domain’.¹¹⁰

In climate change governance, the issue of accountability is critical and holds actors responsible for their decisions that result in greenhouse gas emissions. As climate change is a collective action concern, accountability is at the heart of emission reductions and decarbonisation transformational change. Sareen and Haarstad’s thought-provoking article argues accountability helps understand ‘power differentials and tendencies towards biased representation’.¹¹¹ It is underpinned by ‘norms considered legitimate by a wide range of actors; by metrics and data that, if used for public benefit, provide knowledge about distribution of goods and services; by spaces for negotiations between different levels of authority and by coordination between levels of governance to uphold good governance principles’.¹¹²

In this context, the judiciary through its checks and balances plays a crucial role in addressing climate change. It is concerned with making transformational decisions involving both the ‘processes and outcomes’.¹¹³ Processes include making public authorities accountable for their actions or omissions that produce unsustainable practices, non-implementation and non-enforcement of laws. Desirable outcomes encourage and promote the sustainability agenda in line with the SDGs. Such an understanding makes the judiciary the ‘face of environmental rule of law to the public ... institutions instilled with integrity and accountability are more effective at delivering enduring sustainable development’.¹¹⁴

Transformative change builds support for a culture of compliance and long-term climate sustainability to drive a sustainable future for present and future generations. Accordingly, the Indian judiciary has infused climate accountability within the environmental rule of law paradigm. In *Hanuman Laxman Aroskar v. Union of India (2019)*¹¹⁵, Chandrachud J stated that Article 14 of the Constitution of India guaranteed action against arbitrary decision-making and an affirmative duty of fair treatment.¹¹⁶ This ensures not only upholding environmental rule of law through effective, accountable, and transparent institutions but also promotes the advancement of SDGs and transformative change. This is the first Indian case to formally

106. H. Mees and P. Driessen, ‘A framework for assessing the accountability of local governance arrangements for adaptation to climate change’ (2019) 62(4) *Journal of Environmental Planning and Management* 671–691.

107. M. Bovens, ‘Analysing and Assessing Accountability: A Conceptual Framework’ (2007) 13(4) *European Law Journal* 447–468, 450.

108. J.E. Gyong, ‘Good Governance and Accountability in Democracy’ (2014) 7(26) *European Scientific Journal* 71–89, 77. Answerability implies obligation of the public authorities to provide information and justification for their actions.

109. *ibid.* Enforceability refers to authorities where necessary being stopped or remedying the wrong.

110. Mees and Driessen (n 106) 673. Public domains includes public authorities, private sector including businesses, citizens and civil society organizations to create a public value.

111. S. Sareen and H. Haarstad, ‘Legitimacy and accountability in the governance of sustainable energy transitions’ (2020) 2 *Global Transitions* 47–50, 48.

112. *ibid.* 50.

113. United Nations Research Institute for Social Development, *Policy Innovation for Transformative Change: Implementing the 2030 Agenda for Sustainable Development* (UNRISD 2016) 38.

114. UNEP 2019 (n 46) 21–22.

115. 2019 SCC OnLine SC 441.

116. Article 14 of the Constitution of India states: ‘The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India’.

recognise and explain sustainability transformations.¹¹⁷ The Supreme Court suspended the flawed environmental clearance granted for the development of a greenfield international airport at Mopa in Goa. The integrated environmental parameters across the SDGs domains, for example, the emissions from aircraft and their anticipated impact on the forests and terrestrial ecosystem, were overlooked in the EIA report. Despite the shortcomings, the Expert Appraisal Committee (expert body) granted clearance without following the statutory approval process. Expressing displeasure the court stated ‘the expert body abdicated its role and function by taking into account circumstances which were extraneous to the exercise of its power and failed to notice facets of the environment that were crucial to its decision making ... the processes of the decision are as crucial as the ultimate decision’.¹¹⁸ Relying on the SDGs, Paris Agreement, India’s Nationally Determined Contribution to the Paris Agreement, and international reports, the court directed the government to balance the environment including climate issues with the airport construction objective. Importantly, the court advanced ‘transformative change which reconfigures basic social and production systems and structures ... including implementation, compliance and enforcement ... this would help pursue the 2030 Agenda the SDGs and achieve the internationally agreed goals on pollution control’.¹¹⁹

Climate accountability is witnessed in construction project cases. The construction industry consumes enormous resources and has a significant energy footprint. Globally, the sector accounts for 40% of greenhouse gases.¹²⁰ Domestically, the construction sector emits 22% of India’s total annual carbon-dioxide emission.¹²¹ The regulatory authorities failed to adequately address the evaluation and assessment or monitoring of the environmental and long-term sustainability impacts of these construction projects. For example, in *Society for Protection of Environment & Biodiversity v. Union of India*¹²² the NGT declared illegal those parts of a government notification that exempted specific building and construction projects from the environmental clearance requirement. In the name of ‘ease of doing responsible business’, the government ignored environmental impacts that have a direct bearing on environmental protection and sustainable development. This exemption was also in derogation of India’s international commitments to the Rio Declaration 1992 and Paris Agreement 2015, especially when read in the light of the precautionary principle. Environmental clearances, as a part of the precautionary approach, require the drafting of an EIA report. The EIA report evaluates carbon emissions associated with the construction project, its adverse impact on the environment, and best practice strategies to reduce these emissions. This helps in achieving the ambitious targets and is directly linked to the SDGs.

Carrying capacity assessment is an essential part of urban planning and includes constructional activity.¹²³ It gives effect to sustainable development. In *University of Delhi v. Ministry of Environment, Forest and Climate Change*¹²⁴ the NGT suspended environmental clearance for the construction of a high-rise building project in close vicinity to a reserve forest area. High-rise buildings use more energy than low-rise buildings and generate substantial carbon dioxide emissions.¹²⁵ In this case, the regulatory authorities failed to consider the vital physical and environmental requirements related to the carrying capacity

117. *Hanuman Laxman Aroskar* 2019 (n 115) para 167.

118. *Ibid* paras 169 and 172.

119. *ibid* para 167.

120. N. Ahmed and others, ‘Impact of sustainable design in the construction sector on climate change’ (2020) *Ain Shams Engineering Journal*. Available at: <https://doi.org/10.1016/j.asej.2020.11.002>; P. Graham and R. Rawal, ‘Achieving the 2 °C goal: the potential of India’s building sector’ (2019) 47(1) *Building Research and Information* 108–122, 109.

121. *Society for Protection of Environment & Biodiversity v Union of India* NGT order dated December 8, 2017.

122. *ibid*.

123. Świąder (n 93).

124. 2020 SCC OnLine NGT 557.

125. <https://www.ucl.ac.uk/news/2017/jun/high-rise-buildings-much-more-energy-intensive-low-rise> (accessed 7 April 2021).

assessment of the project. The environmental clearance was granted mechanically and without meaningful appraisal in terms of estimations of total existing particulate matter load, assimilative and supportive capacity. According to the tribunal, ‘carrying capacity is an integral part of sustainability, without which working towards SDGs to tackle climate change only remains on paper ... the whole exercise must lead to environmental sustainability which is the basis of environmental rule of law’.¹²⁶

Climate accountability is again evidenced in the case of *Sukhdev Vihar Residents Welfare Association v. Union of India*.¹²⁷ The NGT permitted the operation of a waste to energy plant in a densely populated residential area. The plant met the prescribed emission standards, installed improved technology and introduced new mechanisms with respect to segregation, processing and induction of waste. Accordingly, the plant was qualified as a Clean Development Mechanism (CDM) project as it took care of ‘all environmental issues as per the international standards including stoppage of generation of greenhouse gas emissions and are environment friendly, and thus eligible for carbon credit’.¹²⁸

Climate futurity

The concept of futurity is crucial for transformations towards sustainability. Futurity encompasses imagination as an essential feature of transformation. It is mediated by rethinking our relationship with nature and requires ‘an imaginative extension into the future one hopes to sustain’.¹²⁹

In climate change matters, imagination requires ‘capacity to collectively envision and meaningfully debate realistic and desirable futures’.¹³⁰ For instance, Dan Bloom’s ‘cli-fi’ (climate change fiction) fashions a climate future narrative denoting a wake-up call to the existential threats and a call for climate justice.¹³¹ Another example is the climate crisis and its translation into the language of posterity for future generations.¹³² A proactive judiciary shapes a sustainable future by envisioning ‘environmental rule of law and SDGs that are mutually reinforcing’.¹³³ As a transformative lever, the judiciary can ‘refer to a series of actions to stop doing the wrong things ... and at the same time [promote] an enabling environment with a [climate] sustainable vision’.¹³⁴

In India, nascent climate futurity is illustrated by visionary judgements that reflect sustainability and its dependence on the environmental rule of law. For example, *Hanuman Laxman Aroskar v. Union of India (2020)*¹³⁵ (subsequent to the 2019 case¹³⁶) demonstrates the Supreme Court’s sustainability vision to advance low-carbon initiatives to reduce greenhouse gas emissions. The court directed the regulatory authorities to explore best practices for climate change and energy conservation in the construction of green-field airports. These could include green infrastructure development programmes, the adoption of less emission-intensive technologies, renewable energy programmes, electrical vehicles, airport carbon accreditation, and the installation of LED lights. In this case, the court allowed the Mopa airport to proceed on the

126. (n 124) para 17 and 27.

127. NGT order dated 2 February 2017.

128. *ibid* para 6.1.2.

129. R. Evans, ‘Fantastic Futures? Cli-fi, Climate Justice, and Queer Futurity’ (2017) 4 (2–3) *Resilience: A Journal of the Environmental Humanities* 94–110, 94.

130. M. Milkoreit, ‘Imaginary politics: Climate change and making the future (2017) 5(62) *Elem Sci Anth* 1–18, 1.

131. Evans (n 129) 95.

132. C. Groves, ‘Sustainability and the future: reflections on the ethical and political significance of sustainability’ (2019) 14 *Sustainability Science* 915–924, 916.

133. UNEP 2019 (n 46) 226.

134. UNEP 2021 (n 2) 152.

135. (2020) 12 SCC 1.

136. (n 115).

assurance by the appropriate authorities to adopt a Zero Carbon Programme both in the construction and operational phases of the airport.

Promoting non-coal fuel sources reflects climate futurity. For example, the NGT in *Utkarsh Panwar v. CPCB* (brick kiln industries)¹³⁷ directed exploring and employing cleaner fuels including piped natural gas (PNG), compressed natural gas, biogas, propane, butane and others that help in reducing carbon dioxide emissions. In *Babubhai Saini v. Gujarat PCB*¹³⁸ the NGT ordered closure of coal gasifier units unless they switched to PNG or clean technology. In *Vinay Shivanand Naik v. State of Karnataka*¹³⁹ the NGT accepted the statement of the state of Karnataka for a transitional move to electric vehicles as an alternate clean, green fuel. These incremental decisions herald carbon emission reductions thereby benefiting the climate and fostering sustainable development.

Similarly, climate futurity is evidenced in the renewable energy sector. In *Hindustan Zinc Limited v. Rajasthan Electricity Regulatory Commission*¹⁴⁰ the Supreme Court promoted renewable sources of energy in the larger public interest to reduce pollution. To reduce dependency on fossil fuels, it is imperative to follow the renewable energy obligations as framed under the energy regulations.¹⁴¹ As India has ratified the Kyoto Protocol, the promotion of efficient and environmentally friendly measures to generate and consume green energy should be encouraged for sustainability and SDGs. Other renewable energy cases encourage wind energy projects¹⁴² and solar energy projects.¹⁴³

Interestingly, there is a revenue case trend that reflects climate futurity. For example, in *Joint Commissioner Income Tax (Gandhinagar) v. Kalpataru Power Transmission*¹⁴⁴ carbon credit and carbon market mechanisms that mitigate the growth in the concentration of greenhouse gases are recognised. The goal is to allow market mechanisms to drive industrial and commercial processes in the direction of low emissions and sustainability. These are validated under the CDM although remaining subject to tax law.

Conclusion

The climate change crisis has resulted in a clarion wake-up call that addresses how we live and assume the right to exploit the finite resources of planet earth for the benefit predominantly of the few and for the present generation. It identifies a limited human understanding and interest in the choices and perils of living in an anthropocene era. However, we are increasingly aware of potentially irreparable consequences due to climate change and are developing appropriate transformations to sustainability responses. The authors have presented a novel argument based on the pursuit of sustainability transformations underpinned by the environmental rule of law through robust institutions like the judiciary. Bolstering the implementation and enforcement of environmental laws alongside infusing a powerful sustainability agenda leads to actioning the environmental rule of law to further the transformational change. As guarantors of environmental rule of law, the judiciary provide the legal foundation to promote transformative societal,

137. 2021 SCC OnLine NGT 47.

138. NGT Order Mach 6 2019.

139. 2020 SCC OnLine NGT 613.

140. (2015) 12 SCC 611; *Protection of Forest Environment v Union of India* (2016) SCC OnLine Utt 2073.

141. For example, the Electricity Act 2003 through regulatory commissions promotes generation of electricity from renewable sources.

142. *T N Godavarman v Union of India* (2016) 13 SCC 586, 604; *K V P Paras v Union of India* 2015 SCC OnLine NGT 193.

143. *Sheela Bahuguna v Union of India* (2018) SCC OnLine Utt 1268.

144. 2019 SCC OnLine ITAT 11358. See also *Malana Power Co v Joint Commissioner of Income Tax* 2018 SCC OnLine ITAT 10750; *Deputy Commissioner of Income Tax v Punjab Hydro Power* 2017 SCC OnLine ITAT 9524; *Deputy Commissioner of Income Tax v Ushdev International* 2016 SCC OnLine ITAT 7982.

organisational and individual changes that ‘reverse the current trends [including climate change, biodiversity and pollution issues] that threaten the well-being of the present and future generations and the survival of other species ... and realisation of the collective vision of a sustainable future for the humanity’.¹⁴⁵

The Indian judiciary, noted for their expansive thinking, and acting as a ‘lever of transformation’, are slowly addressing climate cases despite the lack of comprehensive domestic climate change legislation. The illustrative cases categorised as – climate conscious, climate accountability and climate futurity – demonstrate a sustainability transformative approach. The judicial decisions on climate consciousness create heightened awareness and develop a narrative by transforming climate threats into tangible peril in line with sustainability and SDGs. In climate accountability, the Indian judiciary emphasises that processes are as significant as outcomes. Fostering effective, accountable, and transparent decision-making in climate matters is a transformative incremental step. The judicial imagination in climate futurity is valuable in exploring the vision of a decarbonisation trajectory that helps an incremental move towards a sustainable future. The selected cases reflect progressive cumulative outcomes, albeit incremental, but they nevertheless enable conditions for transformative change. The judicial contribution both actual and potential to the climate crisis offers legitimacy, sustainability progress and support for the SDGs.

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145. UNEP 2021 (n 2) 101.