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EDITORIAL

Legal, Regulatory, and Governance Innovation in Transnational Environmental Law

1. INTRODUCTION

The global community continues to be rocked by disruptive forces, which pose significant challenges for legal systems. Pandemic outbreaks, wars, forced migrations, and new and emerging technologies are all examples of disruptive phenomena that push legal and regulatory frameworks to evolve and innovate.[1] Recent examples include rapidly changing COVID-19 restrictions, wide-ranging sanctions and travel bans in response to the Russia-Ukraine conflict, and increasing regulatory activity to limit potential harm associated with new digital technologies.

Disruption caused by climate change and environmental degradation similarly requires innovative legal responses.[2] These environmental problems are characterized by significant scientific uncertainty regarding future impacts, polycentric causes, ranging from the local to the global, and socio-political controversy.[3] It is difficult to develop stable and sustainable legal frameworks to manage these fluctuating and contested situations. As a result, disruption creates pressure for evolution in existing legal frameworks, or the creation of new legal frameworks.[4]

Transnational environmental law encompasses evolving understandings of 'law', 'regulation', and 'governance' as they relate to the global nature of many contemporary environmental problems.[5] This issue of *Transnational Environmental Law* (*TEL*) highlights the diverse range of legal, regulatory, and governance innovations that continue to be experimented with in an attempt to address complex environmental challenges. These innovative responses can include applying familiar tools in novel ways to environmental problems, as well as new types of legal and governance response. Unsurprisingly, climate change features

1 F. Johns, R. Joyce & S. Pahuja, 'Introduction', in F. Johns, R. Joyce & S. Pahuja (eds), *Events: The Force of International Law* (Routledge, 2011), pp. 1–17, at 1.

2 See, e.g., E. Fisher, 'Environmental Law as "Hot" Law' (2013) 25(3) *Journal of Environmental Law*, pp. 347–58; E. Fisher, E. Scotford & E. Barritt, 'The Legally Disruptive Nature of Climate Change' (2017) 80(2) *The Modern Law Review*, pp. 173–201.

3 Fisher, n. 2 above, p. 351.

4 Fisher, Scotford & Barritt, n. 2 above, p. 178.

5 V. Heyvaert & T.F.M. Etty, 'Introducing Transnational Environmental Law' (2012) 1(1) *Transnational Environmental Law*, pp. 1–11, at 4.

prominently,[6] alongside analyses of transnational regulation of plastics, and surface and groundwater resources.

2. LEGAL INNOVATION

The first four articles in this issue address various ways in which climate change has been the catalyst for legal innovation. As Duvic-Paoli notes, '[i]t is now established that climate change is pushing, as well as exposing, the limits of existing systems of law and governance'.[7] Climate change potentially disrupts both legislation and litigation,[8] both of which are discussed in this issue. Firstly, Duvic-Paoli analyzes the disruptive impacts of climate change on lawmaking processes, followed by pieces by Donger, Mayer, and Burgers, which focus on legal disruption in the context of climate litigation and adjudication.

In 'Re-imagining the Making of Climate Law and Policy in Citizens' Assemblies', Leslie-Anne Duvic-Paoli examines climate citizens' assemblies as an 'innovative solution' to address the shortcomings in governmental responses to the climate emergency.[9] Against a backdrop of 'a suboptimal lawmaking process' leading to climate laws that lack ambition and are inadequately responsive to scientific evidence, citizens' assemblies present 'deliberation as a positive solution, capable of generating better responses to the climate emergency'.[10] Duvic-Paoli evaluates the contributions of the first three national climate citizens' assemblies – held in Ireland, France, and the United Kingdom (UK) – to the making of climate law and policy.[11] She analyzes how these national citizens' assemblies feed into subsequent legislative processes. In both Ireland and the UK, climate assemblies have explicated citizens' preferences, which have in turn shaped policy and legislation.[12] The French citizens' assembly on climate law led to significant changes in climate legislation and regulation, and increased governmental ambition.[13] Duvic-Paoli concludes that although such assemblies provide new avenues for public participation and can have a positive influence on legislative processes, they 'face significant limitations in terms of how they can renew the substance and procedures of lawmaking'.[14]

This nuanced analysis of the contribution of citizens' assemblies underscores the complexities of using law to solve the problem of climate change. Given the wide scope and cross-sectoral nature of this challenge, citizens' assemblies have a 'vast'

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6 Climate change has been described as a 'wicked problem', which defies 'rational and optimal solutions', and is 'beyond the reach of mere technical knowledge and traditional forms of governance': M. Hulme, *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge University Press, 2009), p. 334. See also Fisher, Scotford & Barritt, n. 2 above.

7 L.-A. Duvic-Paoli, 'Re-imagining the Making of Climate Law and Policy in Citizens' Assemblies' (2022) 11(2) *Transnational Environmental Law*, pp. 235–61, at 237.

8 Ibid., p. 237.

9 Ibid., p. 236.

10 Ibid., p. 240.

11 Ibid., pp. 242–4.

12 Ibid., pp. 249–54.

13 Ibid., pp. 254–7.

14 Ibid., p. 261.

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and potentially 'over-ambitious' mandate.[15] Citizens' assemblies are faced with the difficult task of advising national governments on a 'multi-scalar issue', which involves global and subnational legal frameworks which are beyond the power of the assembly to change.[16] Given the scale and complexity of climate change, it is unsurprising that citizens' assemblies view legislative interventions as just one of a suite of tools needed to address this challenge. Economic instruments, regulations, and pedagogical approaches also have a valuable role to play.[17] Further, citizens' assemblies can adopt deliberative and institutional design strategies to address the shortcomings of political and legal institutions which are not designed to prioritize the interests of the young and future generations that will be most affected by climate change.[18] Citizens' assemblies thus represent a promising new mechanism for making inroads into addressing the 'wicked problem'[19] of climate change, and informing and shaping lawmaking processes.

In parallel with Duvic-Paoli's analysis of disruption of the status quo in legislative and policy processes, the contributions by Donger, Mayer, and Burgers bring important new insights into legal disruption in climate change litigation. There is now a rich literature on climate litigation,[20] yet the ways in which litigants are adopting novel strategies that create pressure for evolution in existing legal doctrines and frameworks continue to provide rich new avenues for legal analysis. In her article, 'Children and Youth in Strategic Climate Litigation: Advancing Rights through Legal Argument and Legal Mobilization',[21] Elizabeth Donger examines the involvement of children and youth in strategic climate litigation. She explores the role of child rights in climate cases, which is an important yet under-explored subset of the broader 'rights turn' in climate litigation.[22] Her analysis focuses on 33 'youth-led' cases across 21 jurisdictions,[23] all but one of which target the climate-related acts and omissions of sovereign states.[24]

Donger's analysis, like Duvic-Paoli's article, highlights examples of creative legal strategies to address gaps arising from perceived suboptimal government action on climate change. Donger finds that arguments based on the principle of intergenerational equity are being effectively deployed in youth-led climate cases, yet arguments for

[15] Ibid., p. 244.

[16] Ibid., pp. 257–8.

[17] Ibid., p. 258.

[18] Ibid., pp. 258–9.

[19] Ibid., p. 257.

[20] See, e.g., the recent Symposium Collection on climate change litigation published in (2020) 9(1) *Transnational Environmental Law*, pp. 11–135, with a Foreword by symposium conveners K. Mitkidis & T.N. Valkanou, 'Climate Change Litigation: Trends, Policy Implications and the Way Forward' (2020) 9(1) *Transnational Environmental Law*, pp. 11–6; see also Y. Zhao, S. Lyu & Z. Wang, 'Prospects for Climate Change Litigation in China' (2019) 8(2) *Transnational Environmental Law*, pp. 349–77.

[21] E. Donger, 'Children and Youth in Strategic Climate Litigation: Advancing Rights through Legal Argument and Legal Mobilization' (2022) 11(2) *Transnational Environmental Law*, pp. 263–89.

[22] See, e.g., J. Peel & H.M. Osofsky, 'A Rights Turn in Climate Change Litigation?' (2018) 7(1) *Transnational Environmental Law*, pp. 37–67.

[23] Donger, n. 21 above, pp. 270, 286–9, Table 1.

[24] Ibid., p. 270.

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children's rights are currently under-utilized.[25] In terms of future legal strategies, she recommends that '[y]outh-led litigation should, wherever possible, advance arguments specific to children as a demographic as well as arguments for intergenerational equity'.[26] It is not just youth-led climate litigation strategies that should develop in new directions; similarly, courtrooms and other legal spaces should evolve to accommodate the costs, risks, and trade-offs of children's involvement in climate litigation.[27] The increasing involvement of children and youth as plaintiffs in climate litigation thus opens up opportunities for novel lines of legal argument and more inclusive legal spaces.

Judicial innovation in climate litigation cases can elicit mixed responses, including in the light of the separation of powers in constitutional democracies.[28] Against this backdrop, there is a tension between desirable doctrinal evolution to respond to disruptive phenomena such as climate change and 'unacceptable judicial activism'.[29] In 'The Duty of Care of Fossil-Fuel Producers for Climate Change Mitigation: *Milieudefensie* v. *Royal Dutch Shell*',[30] Benoit Mayer comments on a landmark climate litigation case, decided in 2021. In *Milieudefensie* v. *Royal Dutch Shell*, the Hague District Court (the Netherlands) issued an injunction against Shell to reduce its greenhouse gas (GHG) emissions by 45% by 2030, compared with 2019 levels.[31] According to Mayer, '[t]he most innovative aspect of the judgment regards its interpretation of the Dutch law on torts as requiring [Shell] to take climate change mitigation action'.[32] Mayer welcomes the establishment of a corporate duty of care to mitigate climate change, yet he notes that determining the content of the duty of care is 'a challenging task'.[33] In particular, he is sceptical of the Court's reliance on global mitigation objectives and climate science to determine the level of GHG emissions that Shell could emit without breaching its duty of care.[34]

Mayer suggests that the Court's 'innovative decision', and particularly its 'methodological choices' for determining the content of the duty of care, raise concerns that the

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[25] Ibid., pp. 270–80.

[26] Ibid., p. 280.

[27] Ibid., p. 285.

[28] See, e.g., the analysis of *Urgenda Foundation* v. *Government of the Netherlands (Ministry of Infrastructure and the Environment)* in J. van Zeben, 'Establishing a Governmental Duty of Care for Climate Change Mitigation: Will *Urgenda* Turn the Tide?' (2015) 4(2) *Transnational Environmental Law*, pp. 339–57, at 352–6; and 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*, pp. 167–92. See also L. Burgers, 'Should Judges Make Climate Change Law?' (2020) 9(1) *Transnational Environmental Law*, pp. 55–75.

[29] Van Zeben, ibid., p. 354.

[30] B. Mayer, 'The Duty of Care of Fossil-Fuel Producers for Climate Change Mitigation: *Milieudefensie* v. *Royal Dutch Shell*, District Court of The Hague (The Netherlands)' (2022) 11(2) *Transnational Environmental Law*, pp. 407–18.

[31] *Milieudefensie* v. *Royal Dutch Shell*, District Court of the Hague (The Netherlands), 26 May 2021, ECLI:NL:RBDHA:2021:5337, English translation ECLI:NL:RBDHA:2021:5339 available at: https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2021:5339.

[32] Mayer, n. 30 above, p. 410.

[33] Ibid., p. 412.

[34] Ibid., pp. 412–15.

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Court is going beyond its constitutional role in interpreting and applying the law.[35] He proposes an alternative methodology which applies Martti Koskenniemi's distinction between 'descending reasoning', in which norms are inferred from general international law principles, and 'ascending reasoning', in which norms are deduced from general state practice.[36] While the judgment of the Hague District Court arguably reflects a strong preference for the former type of reasoning, it does not engage with ascending reasoning by considering empirical evidence of the current practices of oil-and-gas corporations. Mayer contends that a preferable approach would combine both types of reasoning by referring to international agreements and scientific reports, as well as sectoral practices among other companies.[37] If the latter approach were adopted, the interpretation of the standard of care should incorporate what could be expected from an average or reasonable oil-and-gas company.[38] Mayer suggests that such an approach reflects a 'midpoint' between ascending and descending reasoning, which is consistent with the courts' function in applying, rather than making, the law.[39]

In 'An Apology Leading to Dystopia: Or, Why Fuelling Climate Change is Tortious',[40] Laura Burgers responds to Mayer's analysis and offers a more sympathetic alternative reading of the Hague District Court's judgment. Critiquing Mayer's application of Koskenniemi's work, Burgers argues that the Court did use an appropriate combination of ascending and descending reasoning, noting that an emphasis on normativity is legitimate in the context of national tort law.[41] She therefore rejects Mayer's claim that sectoral practices should have played a more central role in determining the content of Shell's duty of care, arguing that such an approach 'is dangerously apologetic, and risks hollowing out the duty'.[42]

Burgers also disagrees with Mayer's characterization of the judgment as 'plagued by inconsistencies'.[43] Applying Koskenniemi's rules for legal reasoning to national tort law, Burgers contends that the Court order imposed on Shell appropriately reflects the result of the debate between the parties and the application of the Dutch rules of civil procedure.[44] Thus, Burgers' analysis concludes that this 'landmark' ruling[45] struck an appropriate balance between responding to the disruptive phenomenon of climate change and maintaining coherence of legal reasoning with existing legal doctrines and frameworks, particularly in the context of Dutch tort law.

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35 Ibid., pp. 416, 418.

36 M. Koskenniemi, *From Apology to Utopia: The Structure of International Legal Argument* (Cambridge University Press, 2009), pp. 59–60 (cited in Mayer, n. 30 above, p. 415.

37 Mayer, n. 30 above, pp. 415–18.

38 Ibid., p. 417.

39 Ibid., pp. 417–18.

40 L. Burgers, 'An Apology Leading to Dystopia: Or, Why Fuelling Climate Change is Tortious' (2022) 11(2) *Transnational Environmental Law*, pp. 419–31.

41 Ibid., p. 425.

42 Ibid., p. 421.

43 Ibid., p. 425 (citing Mayer, n. 30 above, p. 412.

44 Ibid., p. 425–6.

45 Ibid., p. 420.

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In 'Judicial Interpretation of Tort Law in *Milieudefensie* v. *Shell*: A Rejoinder',[46] Mayer clarifies that his disagreement with Burgers concerns the method that a judge should use to determine the content of the corporate duty of care to mitigate climate change. The dialogue between Mayer and Burgers exemplifies the evolution of legal doctrines in response to climate change, as well as the contested nature of this legal disruption.

3. REGULATORY INNOVATION

In addition to innovative developments in lawmaking and litigation, environmental problems generate pressure for evolution in broader regulatory frameworks.[47] Alongside traditional national legal responses, the transnational environmental law landscape encompasses an expansive 'quasi-legal hinterland' of other types of regulatory arrangement, which include soft law, self-regulatory codes, and standards, to name but a few.[48] In these domains, too, the distinctive features of environmental problems, and the challenges of achieving political agreement on appropriate solutions, lead to experimentation and new regulatory responses. The next three articles in this issue explore diverse ways in which regulatory arrangements are evolving, and should evolve, to address environmental challenges associated with climate change, plastics, and international watercourses.

In her article, 'The Public Law Paradoxes of Climate Emergency Declarations', Jocelyn Stacey analyzes climate emergency declarations, which present a new frame for climate change and its impacts, as well as a new site for legal analysis.[49] The transnational phenomenon of issuing climate emergency declarations began in Australia in 2016; 38 countries and nearly 2,000 municipalities have since followed suit.[50] These declarations raise distinctive issues as they are not conventional declarations of states of emergency, but rather take the form of statements made by legislative bodies at local, state, and national levels.[51] Stacey examines these new instruments from a public law perspective, focusing on declarations issued in the UK, Canada, Australia, and Aotearoa/New Zealand. She draws upon legal theory, constitutional law, and disaster law to analyze how climate emergency declarations are 'defined, regulated by time, authorized and held to account'.[52]

As a new form of quasi-legal instrument with an ambiguous public law status, Stacey aptly characterizes climate emergency declarations as a site of 'legal

[46] B. Mayer, 'Judicial Interpretation of Tort Law in *Milieudefensie* v. *Shell*: A Rejoinder' (2022) 11(2) *Transnational Environmental Law*, pp. 433–6.

[47] See, e.g., A. Huggins, 'The Evolution of Differential Treatment in International Climate Law: Innovation, Experimentation, and "Hot" Law' (2018) 8(3–4) *Climate Law*, pp. 195–206.

[48] Heyvaert & Etty, n. 5 above, p. 4.

[49] J. Stacey, 'The Public Law Paradoxes of Climate Emergency Declarations' (2022) 11(2) *Transnational Environmental Law*, pp. 291–323, at 292.

[50] Ibid., pp. 293–4.

[51] Ibid., pp. 295–6.

[52] Ibid., p. 302.

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disruption'.[53] Her article valuably contributes to other public law analyses of climate change as a 'legally disruptive phenomenon' in which the traditional incremental application of legal concepts, doctrines, and frameworks proves to be insufficient to deal with the instability and flux arising from the climate challenge.[54] Stacey provides a nuanced analysis of the definitional, temporal, and exceptionalism paradoxes evident in her selected subset of climate emergency declarations.[55] She concludes that '[t]he climate emergency is at once known and unknown, acute and systemic, immediate and expansive, temporary and transformative, routine and exceptional, centralizing and decentralizing'.[56] Climate emergency declarations therefore exemplify a new form of regulation emerging in response to climate disruption. Like other forms of transnational environmental law, climate emergency declarations reflect intersections between non-governmental and governmental action, multiple levels of governance, and between law, policy, and politics.[57]

Transnational environmental regulation (TER) is also a site of ongoing transformation and evolution.[58] The article by Hope Johnson, Zoe Nay, Rowena Maguire, Leonie Barner, Alice Payne, and Manuela Taboada, 'Conceptualizing the Transnational Regulation of Plastics: Moving Towards a Preventative and Just Agenda for Plastics',[59] valuably contributes to TER scholarship by analyzing the transnational regulation of plastics. While previous analyses have focused on treaty design to address fragmentation in multilateral environmental agreements covering plastics, the analysis by Johnson and co-authors adopts a novel lens to develop 'a more comprehensive map of the transnational regulatory governance for plastics'.[60] Applying a methodology that combines doctrinal analysis and a policy-oriented approach, the authors' analysis identifies four 'frames' or sets of meanings attributed to plastics within transnational regulation: plastics as 'waste to be managed'; 'a material to be prevented'; a good or waste to be 'traded freely'; and 'inputs/outputs in production-consumption systems'.[61] These various frames have implications for how problems, causes, and solutions are perceived and represented in law and policy.[62]

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53 Ibid., p. 317.

54 Ibid., p. 317 (citing Fisher, Scotford & Barritt, n. 2 above, p. 174).

55 Ibid., pp. 302–17.

56 Ibid., p. 317.

57 Ibid., p. 293.

58 See, e.g., V. Heyvaert, *Transnational Environmental Regulation and Governance: Purpose, Strategies and Principles* (Cambridge University Press, 2018), Ch. 1; see also V. Heyvaert, 'The Transnationalization of Law: Rethinking Law through Transnational Environmental Regulation' (2017) 6(2) *Transnational Environmental Law*, pp. 205–36.

59 H. Johnson, Z. Nay, R. Maguire, L. Barner, A. Payne & M. Taboada, 'Conceptualizing the Transnational Regulation of Plastics: Moving Towards a Preventative and Just Agenda for Plastics' (2022) 11(2) *Transnational Environmental Law*, pp. 325–55.

60 Ibid., p. 327.

61 Ibid., p. 328.

62 See the 'What's the problem represented to be?' approach of Carol Bacchi in C. Bacchi, 'Introducing the "What's the Problem Represented to Be?" Approach', in A. Bletsas & C. Beasley (eds), *Engaging with Carol Bacchi: Strategic Interventions and Exchanges* (The University of Adelaide Press, 2012), pp. 21–4 (cited in Johnson et al., n. 59 above, pp. 327–8 (n. 14).

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Johnson and co-authors also identify a range of areas for 'future scholarship, advocacy, and reform' to address deficiencies in the existing transnational regulation of plastics.[63] Firstly, despite their clear relevance, justice and human rights frames are currently insufficiently utilized in discourses on plastics regulation.[64] Secondly, most framings focus on the management of plastics pollution and waste, rather than deep engagement with the more challenging task of preventing plastics production and consumption.[65] Thirdly, existing legal and regulatory frameworks in multilateral environmental agreements and international economic law enable and reinforce plastics production and consumption, as well as unequal global flows of plastics.[66] There is therefore a need for new paradigms to inform the ongoing evolution of effective and just transnational regulation of plastics.

Soft law is one of the innovative tools that can be used to reform existing paradigms. The ostensible benefits of soft law include that 'it is easier and less costly to negotiate, imposes lower sovereignty costs, permits greater flexibility to cope with uncertainty, allows states to be "managed" into deeper compliance over time, copes better with the diversity of states, and enables international law to be more accountable to non-state actors'.[67] Although soft law's 'blurring of the normativity threshold' has been critiqued for undermining legal certainty in international law,[68] soft law instruments are arguably well suited for addressing and managing the disruptive features of transnational environmental problems.

In 'Softness in the Law of International Watercourses: The (E)merging Normativities of China's Lancang-Mekong Cooperation',[69] David Devlaeminck evaluates the role of soft law instruments in fostering transnational cooperation. He analyzes China's increasing reliance on soft *instrumentum* – non-binding instruments created by legal actors which have legal effects[70] – to manage transboundary water resources with its riparian neighbours. He focuses, in particular, on the water resources priority area of the Lancang-Mekong Cooperation (LMC), which seeks greater engagement between China and its Asian neighbours with whom it shares the Lancang-Mekong river. The LMC is a branch of China's Belt and Road Initiative, which aims to promote economic growth and interconnectivity between China and 140 states around the world through diverse mechanisms, including infrastructure investments, institutions, and soft law

63 Ibid., p. 328.
64 Ibid., p. 355.
65 Ibid.
66 Ibid.
67 J.E. Alvarez, 'The Relativity Apocalypse Is Nigh' (2020) 114 *American Journal of International Law Unbound*, pp. 77–81. See also G.C. Shaffer & M.A. Pollack, 'Hard vs. Soft Law: Alternatives, Complements, and Antagonists in International Governance' (2010) 94 *Minnesota Law Review*, pp. 706–99.
68 P. Weil, 'Towards Relative Normativity in International Law?' (1983) 77(3) *American Journal of International Law*, pp. 413–42, at 415.
69 D.J. Devlaeminck, 'Softness in the Law of International Watercourses: The (E)merging Normativities of China's Lancang-Mekong Cooperation' (2022) 11(2) *Transnational Environmental Law*, pp. 357–80.
70 Ibid., p. 359.

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instruments.[71] Devlaeminck argues that China's use of soft *instrumentum* in the LMC reflects both 'merging normativities' by incorporating international norms and best practices from the law of international watercourses, and 'emerging normativities' by influencing the development of international water law through its unique project approach.[72]

A disruptive feature of environmental problems is their politically charged and contested nature, which contributes to the challenge of reaching agreement on rights and responsibilities, and appropriate legal responses.[73] In transnational regulatory settings this issue can be compounded by political power imbalances, tensions, and disagreements between states.[74] As Devlaeminck notes, although 153 states have transboundary freshwater watercourses, there is limited membership of the global water conventions, leading to major implementation gaps.[75] In contexts in which reaching a binding agreement is 'impractical, impossible, or undesirable',[76] Devlaeminck suggests that soft *instrumentum* has the potential to provide a new vehicle for transboundary water cooperation throughout the world.[77] Particularly for states that are reluctant to become party to binding agreements, soft *instrumentum* could provide a 'safe space for normative experimentation' against the backdrop of customary international law obligations.[78] The use of soft *instrumentum* for managing transboundary water resources is thus a further example of regulatory innovation to address a complex and politically charged environmental problem.

4. GOVERNANCE INNOVATION

The broad concept of governance encompasses regulation.[79] 'Governance' describes the 'management of the course of events in the social system',[80] and governance solutions can be initiated by the state, the private sector, or the community.[81] In contrast, in traditional command-and-control regulation, or direct regulation, the state typically specifies a particular end or process with which regulated entities are required to comply.[82] The latter approach may not be optimal for managing some environmental

71 Ibid., pp. 359–60.
72 Ibid., pp. 360, 378.
73 Fisher, Scotford & Barritt, n. 2 above, pp. 174, 177–8.
74 Huggins, n. 47 above, p. 197.
75 Devlaeminck, n. 69 above, p. 358.
76 Ibid., p. 358.
77 Ibid., pp. 358, 360.
78 Ibid., p. 379.
79 Regulation refers to the large subset of governance that is concerned with standard setting, monitoring, and enforcement: S. Burris, M. Kempa & C. Shearing, 'Changes in Governance: A Cross-Disciplinary Review of Current Scholarship' (2008) 41(1) *Akron Law Review*, pp. 1–66, at 9.
80 Ibid.
81 W. Nsoh, 'Achieving Groundwater Governance: Ostrom's Design Principles and Payments for Ecosystem Services Approaches' (2022) 11(2) *Transnational Environmental Law*, pp. 381–406, at 387.
82 M. Lee, *EU Environmental Law: Challenges, Change and Decision Making* (Hart, 2005), p. 183.

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problems, including in situations in which the inflexibility of direct regulation is counter-productive, and in jurisdictions where enacting these types of environmental regulatory control is not prioritized.[83]

Market-based governance approaches, such as payments for ecosystem services (PES), recognize the role of natural resources in providing a range of goods and services that are of value to society.[84] Walters Nsoh's contribution, 'Achieving Groundwater Governance: Ostrom's Design Principles and Payments for Ecosystem Services Approaches', explores the potential for PES to contribute to the effective governance of groundwater as a common pool resource (CPR). While previous analyses have focused on command-and-control regulatory approaches that limit the extraction of groundwater resources, Nsoh argues that market-based approaches can provide a 'new and flexible framework' for governing groundwater resources.[85]

A range of governance models have been proposed to address the inherent complexities and 'wicked' nature of many environmental problems.[86] Elinor Ostrom's work on design principles for governing CPRs is one highly influential contribution to this body of knowledge.[87] Ostrom developed eight design principles for the governance of sustainable commons: clearly defined boundaries, congruence with local circumstances, collective-choice arrangements, effective monitoring, graduated (responsive) sanctions, conflict resolution, recognition of the rights of commons users, and understanding of broader ecological systems.[88]

In his article Nsoh uses Ostrom's principles as an analytical tool to examine if, and how, PES can be an effective tool for groundwater governance. He concludes that PES approaches 'can be designed' to align with Ostrom's principles for governing CPRs.[89] However, he acknowledges the risk that PES schemes may 'reward bad environmental behaviour' as they do not problematize the 'right to pollute' and focus instead on attenuating environmental impact.[90] Nsoh suggests that one approach to address this concern is to employ PES as a complementary mechanism to conventional regulation, providing an additional 'layer of incentives' for permitted activities,[91] rather than a stand-alone solution.

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83 Nsoh, n. 81 above, p. 406.

84 Ibid., p. 390.

85 Ibid., pp. 383 (n. 13); 406.

86 E.g., Holley, Gunningham and Shearing have proposed a model of new environmental governance, which they argue is most beneficial when 'environmental challenges are severe': C. Holley, N. Gunningham & C.D. Shearing, *The New Environmental Governance* (Earthscan, 2012), p. 173. See also B.A. Cosens et al., 'Designing Law to Enable Adaptive Governance of Modern Wicked Problems' (2020) 73(6) *Vanderbilt Law Review*, pp. 1687–732.

87 See, e.g., E. Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press, 1990). As Nsoh notes, Ostrom's work on design principles for CPR has been cited in over 40,000 academic works, according to Google Scholar: Nsoh, n. 81 above, p. 388 (n. 46).

88 Ostrom, ibid., p. 90 (discussed in Nsoh, n. 81 above, p. 388).

89 Nsoh, n. 81 above, p. 406.

90 Ibid., p. 405.

91 Ibid., pp. 405–6.

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5. CONCLUSION

The inherent complexity of transnational environmental problems calls for new ways of thinking about law, regulation, and governance, as well as flexible strategies for implementation. The articles in this issue of *TEL* offer insights into innovative legal, regulatory, and governance approaches to address climate change, plastics pollution, and surface and groundwater challenges. They also outline a range of future lines of inquiry to continue to expand how the broader legal community responds to ongoing environmental degradation and disruption.

6. *TEL* EDITORIAL BOARD DEVELOPMENTS

There are several changes to the *TEL* Editorial team to be announced.

Firstly, it is with gratitude that we say goodbye to Melissa Powers and Geetanjali Ganguly, who have stepped down from their respective roles as Book Reviews Editor and Assistant Editor. Thanks are owed to them both for their years of service to *TEL*, and we wish them all the very best with their future endeavours.

Secondly, we are excited to welcome four excellent new Assistant Editors to *TEL*'s editorial team: Daniel Bertram (European University Institute, Florence (Italy)), Edwin Alblas (Wageningen University (The Netherlands)), Eva van der Marel (University of Oxford (UK)), and Howard Jyun-Syun Li (University of Illinois at Urbana-Champaign (United States)). We extend the warmest of welcomes to each of these new colleagues, and we look forward to a fruitful collaboration in the years to come.

As always, we are deeply grateful to our contributing authors, reviewers, readers and *TEL* team members for their valuable contributions.

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