1. Introducing loss and damage

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1. INTRODUCTION

Efforts within the UN climate regime to reduce greenhouse gas (GHG) emissions sufficiently to avoid climate change, to deal effectively with loss and damage (L&D)² and to provide effective avenues to remedy associated harms have so far failed.³ While these efforts are ongoing, the impacts of climate change are increasingly obvious and severe, and it is becoming more and more clear that a broad range of international regimes and domestic legal systems will be challenged to respond to calls for appropriate remedies for those harmed by L&D. In this volume we explore, at a conceptual level, the many issues that will arise as legal systems around the world are confronted with climate change-related L&D claims. To provide some context for this analysis, we start in this introductory chapter with a high-level overview of issues related to the scope and definition of L&D.

L&D is not defined in the UN climate regime. It has been suggested in the literature, however, that the phrase ‘loss and damage’ recognizes two categories of harm. One category involves permanent harm, or irrecoverable ‘loss’, such as the loss of landmass from sea-level rise. The second category involves reparable or recoverable ‘damage’, such as shoreline damage from storms.⁴ The concept of L&D has also been delineated in terms of economic and non-economic L&D, and slow-onset and extreme weather events.⁵ The focus has been on

¹ This chapter is based on M. Doelle and S. Seck, ‘Loss & Damage from Climate Change: A Maturing Concept in Climate Law?’ (2020) 20(6) *Climate Policy* 669–80.

² The foundation of the regime is the Framework Convention on Climate Change (United Nations, *United Nations Framework Convention on Climate Change* (1992) <<https://unfccc.int/resource/docs/convkp/conveng.pdf>> accessed 5 November 2020. More recently, the Paris Agreement has become the focus of the regime (United Nations, *Adoption of the Paris Agreement* (Decision 1/CP.21)).

³ Linda Siegele, ‘Loss and Damage (Article 8)’ in Daniel Klein and others (eds), *The Paris Agreement on Climate Change: Analysis and Commentary* (Oxford University Press 2017) 224–38; Emma Lees, ‘Responsibility and Liability for Climate Loss and Damage after Paris’ (2017) 17(1) *Climate Policy* 59.

⁴ ‘Framing the Loss and Damage Debate: A Conservation Starter’ (Climate Development and Knowledge Network and others August 2012) <<https://germanwatch.org/sites/germanwatch.org/files/publication/6673.pdf>> accessed 5 November 2020. See also James Morrissey and Anthony Oliver-Smith, ‘Perspectives on Non-Economic Loss & Damage: Understanding Values at Risk from Climate Change’ (Loss and Damage in Vulnerable Countries Initiative 2012) <www.eldis.org/document/A71918> accessed 5 November 2020; Ainun Nishat and others, ‘A Range of Approaches to Address Loss and Damage from Climate Change Impacts in Bangladesh’ (Climate Development and Knowledge Network and others June 2013) <<http://asiapacificadapt.net/sites/default/files/resource/attach/a-range-of-approaches-to-address-loss-and-damage-from-climate-change-impacts-in-bangladesh.pdf>> accessed 5 November 2020.

⁵ Sam Fankhauser, Simon Dietz and Phillip Gradwell, ‘Non-Economic Losses in the Context of the UNFCCC Work Programme on Loss and Damage’ (Centre for Climate Change Economics and Policy, Grantham Research Institute on Climate Change and the Environment 2014). See also Doreen Stabinsky

harm caused by human-induced climate change itself. A more controversial category of harm associated with climate change not clearly falling within the definition of L&D is harm caused by response measures, including by mitigation efforts, adaptation and geoengineering.

A set of concepts that may help to clarify the meaning and scope of L&D includes the terms ‘avoided’, ‘unavoided’ and ‘unavoidable’ L&D, introduced by Verheyen in one of the earlier research reports on the issue.⁶ ‘Avoided’ refers to the climate impacts that have been and will be prevented by existing mitigation efforts. ‘Avoidable’ refers to impacts that can still be avoided through enhanced mitigation and through adaptation. ‘Unavoidable’ L&D are impacts that are not preventable through enhanced future efforts. They are already inevitable as a result of past actions and cannot be avoided even with best efforts. Unavoidable L&D is also referred to as ‘locked in’.

It is also important to consider the relationship between mitigation, adaptation and L&D. It is well recognized that the level of mitigation affects the scale of L&D. The more ambitious our collective mitigation effort, the less future L&D we will suffer. The relationship between adaptation and L&D is similarly close, but more complex. Indeed, when the Warsaw International Mechanism for loss and damage associated with climate change impacts (WIM) was established, it was placed within the Cancun Adaptation Framework.⁷ The preamble of the decision by the Conference of the Parties (COP) establishing the WIM acknowledges that L&D arising from climate change ‘includes, and in some cases involves more than, that which can be reduced by adaptation’.⁸

Adaptation efforts are critical to reducing the amount of L&D caused by climate change. Much can be done to assist those affected by climate change – both human and natural systems – to adapt. Adjustments to agricultural and forest management practices to deal with changes in temperature or precipitation patterns are among the many examples. Of course, not everyone affected by climate change has the necessary capacity, resources or other means to maximize adaptation opportunities. This means that there may be theoretical opportunities to avoid L&D through effective adaptation that are not realized.⁹ This, in itself, makes it difficult to draw a clear line between adaptation and L&D.

The issue of displacement is illustrative of the complex inter-relationship between adaptation and L&D. If we take a hypothetical small island state that is unable to protect some or all of its territory from sea-level rise, one might be inclined to view this as a failure of adaptation, and the resulting impact as L&D suffered by the residents of the affected small island state.

and Juan P Hoffmaister, ‘Loss and Damage: Defining Slow Onset Events’ (Third World Network 2012) <https://unfccc.int/files/adaptation/cancun_adaptation_framework/loss_and_damage/application/pdf/loss_and_damage_bp3_asia_and_eastern_europe_regional_expert_meeting_slow_onset_events.pdf> accessed 5 November 2020.

⁶ Roda Verheyen, ‘Loss and Damage: Tackling Loss & Damage – A New Role for the Climate Regime?’ (Climate Development and Knowledge Network and others November 2012) 6 <www.geo.uzh.ch/~chuggel/files_download/phd_colloquium/verheyen_tackling_loss_damage_cdkn12.pdf> accessed 5 November 2020.

⁷ UNFCCC, *Warsaw International Mechanism for Loss and Damage Associated With Climate Change Impacts* (Decision 2/CP.19).

⁸ Ibid. See also Siegele (n 3) 226; Lees (n 3).

⁹ Marc Van Den Homberg and Colin McQuistan, ‘Technology for Climate Justice: A Reporting Framework for Loss and Damage as Part of Key Global Agreements’ in Reinhard Mechler and others (eds), *Loss and Damage from Climate Change: Concepts, Methods and Policy Options?* (Springer 2019) 513–45 <https://doi.org/10.1007/978-3-319-72026-5_22> accessed 5 November 2020.

However, the failure to protect its territory could be as a result of technical adaptation limits or could be related to the lack of financial resources to implement the necessary measures. Furthermore, how the small island state itself (in case of internal displacement) and the global community (in case of external displacement) responds to the loss of territory will ultimately affect the scale and distribution of the resulting harm. How much say do those displaced have over the preferred solutions? To what extent do the solutions cause L&D to others adversely affected by these solutions? To what extent do the solutions offer opportunities either to those displaced or to those who receive them? Is the focus on individual impacts or on collective L&D, such as loss of culture and community? Are efforts to find solutions for displaced persons to minimize their individual or collective L&D considered adaptation, or is adaptation limited to efforts to preserve the territory of the small island state?¹⁰ These are among the issues that arise in efforts to understand and delineate the complex relationship between adaptation and L&D.

As will be explored in Chapters 5–8 of this volume, efforts under the UN climate regime to fully integrate L&D into the finance, transparency and stocktake elements of the Paris Agreement have been met with strong resistance from key developed countries. This has important implications for the consideration of L&D in the future, particularly its role in the five-year review cycles under the Paris Agreement designed to increase ambition over time. The future of the issue within the UN climate regime remains uncertain, and the prospects for addressing funding needs to actually address L&D remain bleak. The focus, for now, can be expected to continue to be on improving understanding of the challenge, and exploring non-compensatory avenues to help Parties manage the impacts.¹¹

Attention to what avenues might exist outside the UN climate regime to pursue remedies for L&D leads to a wide range of conceptual questions that will be the primary focus of this chapter. For example, within the climate regime, one might presume that the actors seeking remedies for L&D (if, indeed, remedies were to be available) would be states, although initial discussions tended to treat ‘vulnerable countries as populations’, rather than states.¹² Similarly, under the climate regime it has been presumed by most Parties, at least so far, that those who might have a responsibility to fund L&D are also states.¹³ Outside the climate regime, this clearly cannot be presumed.¹⁴

As perspectives on L&D from outside the climate regime are considered, attention shifts to a wide range of actors and institutions, and new areas of law, that are all potentially relevant to the search for remedies. For example, what is the relevance, if any, of migration and refugee law, disaster law, law of the sea or international human rights law to the question of L&D for climate harms? What is the relationship between L&D and climate justice? Many areas of law will be challenged to deal with L&D, and as a result the issue needs to be considered from a great variety of perspectives. These issues are explored in detail in the following chapters.

¹⁰ Benoît Mayer, ‘Whose Loss and Damage: Promoting the Agency of Beneficiary States’ (2014) 4 *Climate Law* 267; Karen E McNamara and others, ‘The Complex Decision-Making of Climate-Induced Relocation: Adaptation and Loss and Damage’ (2018) 18(1) *Climate Policy* 111.

¹¹ Siegle (n 3); Lees (n 3).

¹² Mayer (n 10).

¹³ Jonathan Gewirtzman and others, ‘Financing Loss and Damage: Reviewing Options under the Warsaw International Mechanism’ (2018) 18(8) *Climate Policy* 1076; Siegle (n 3).

¹⁴ See Chapters 16 to 20 of this volume.

2. LEGAL PERSPECTIVES ON THE FUTURE OF LOSS AND DAMAGE

In this section, we consider L&D through the lens of potential legal and related strategies for those who have experienced climate harms. Specifically, we consider different ways to frame the harm suffered, potential actionable wrongs, remedies and parties to a L&D dispute. We draw on experience to date from climate litigation and legal concepts drawn from other contexts such as insurance, which aims to spread risk while providing the insurer with the ability to sue a third party to recover costs paid out. However, the aim here is conceptual, in recognition of the fact that law must evolve to address climate L&D challenges and domestic laws will differ from jurisdiction to jurisdiction. In many areas of law, it may be too early to predict the direction that litigants, courts and law makers will take. The aim therefore is to explore options rather than to predict specific directions, approaches or outcomes in specific domestic or international legal systems. We have also consciously chosen not to adopt a particular theory to inform our exploration of L&D. However, as appropriate, we observe that some legal and related strategies will align more closely with climate justice or human rights-informed approaches to L&D, while others will suggest the potential of transnational or multi-level governance. Attention will also be paid to key foundational concepts such as climate vulnerability and adaptive capacity.

2.1 Framing the Harm Suffered

Whether it is in the context of the WIM, insurance, funding mechanisms or liability, defining harm from L&D resulting from climate change will be critical. The approach taken to delineating harm from L&D will undoubtedly vary depending on the context, including whether the harm is reversible, whether it was avoidable, and perhaps whether it can be expressed in monetary terms. Moreover, courts faced with claims might reach a different conclusion on what constitutes L&D than an insurance or compensation scheme set up to protect farmers in a developing country from the risk of drought or flooding, for example.

One of the challenges will be to separate harm linked to anthropogenic climate change from harms from other sources. Extreme weather events such as wind storms will be amplified by climate change, but in many cases these events will not be solely attributable to human influence. Similarly, harm associated with heat waves, droughts, floods, coastal erosion, melting permafrost, melting ice or warming oceans will be exacerbated, but may not always be solely caused, by climate change.¹⁵ Health impacts may face similar challenges, depending on whether climate change introduces a whole new health risk (such as the introduction of

¹⁵ Rajendra K Pachauri and others (eds), 'Climate Change 2014: Synthesis Report Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change' (Intergovernmental Panel on Climate Change 2014). Valérie Masson-Delmotte and others, 'Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty' (Intergovernmental Panel on Climate Change 2018). This was formally approved at the first joint session of working groups 1, II and III of the IPCC and accepted by the 48th session of the IPCC.

a disease to a region) or exacerbates an existing risk (such as health impacts of heat waves).¹⁶ Separating out the impact of climate change on such harm will be among the challenges of dealing fairly with harm from L&D.¹⁷

Harm related to displacement illustrates the challenge of separating harm linked to climate change from other sources of the harm. Consider a farmer in a developing country who is internally displaced after successive years of crop failure. The farmer's plight may have been significantly influenced by climate change-induced droughts, flooding, storms or other changes to the climate system, but they may have also been influenced by changes in markets for the crops grown, unavailability of manual labour or financial mismanagement of the farm.

The challenge of separating climate-related harm from other sources of harm is, of course, not limited to harm that arises directly from the impacts of climate change. Similar issues arise with respect to harm caused by response measures to climate change, such as geoengineering. For example, if ocean fertilization is attempted to increase the carbon uptake of the world's oceans, such efforts have the potential to cause harm to those depending on ocean resources. A key challenge will be to decide which harms related to climate response measures should be included under the concept of L&D, such as whether to include those affected by an inequitable transition or otherwise harmed by efforts to mitigate climate change.

A key potentially unifying concept in this regard will be how to separate L&D from baseline conditions. The details will vary, but in each case the harm will have to be assessed against what would have happened without anthropogenic climate change.¹⁸ The nature of the harm, whether slow-onset or arising from an extreme weather event, will obviously be relevant to this assessment. Moreover, as part of this process, it will be crucial to address the temporal dimension when selecting the baseline conditions against which climate harms are to be measured: are harms to be measured from the beginning of the industrial revolution or from some other date?

It can be expected that arguments will be advanced that the baseline for measuring climate L&D should be the start of global efforts to reduce emissions in 1990, or the moment at which global temperature increases surpass the Paris Agreement's 1.5 (or well below 2) degree goal. A related consideration is whether future harm will be included in the assessment of harm. If so, projections of future harm will be significantly dependent on mitigation efforts. More generally, it is far from clear whether the legal systems challenged to deal with harm from L&D need to prepare for harm caused by a 1.5 degree 'world', or 2, or 3, or perhaps even 4 or 5 degrees Celsius.¹⁹

Another key consideration is whether L&D will include only those impacts that have economic consequences, or whether it will extend to non-economic impacts, including cultural

¹⁶ 'COP 24 Special Report: Health and Climate Change' (World Health Organization 2018) <www.who.int/globalchange/publications/COP24-report-health-climate-change/en/> accessed 5 November 2020.

¹⁷ Sophie Marjanac, Lindene Patton and James Thornton, 'Acts of God, Human Influence and Litigation' (2017) 10 *Nature Geoscience* 616.

¹⁸ Myles Allen and others, 'Scientific Challenges in the Attribution of Harm to Human Influence on Climate' (2007) 155(6) *University of Pennsylvania Law Review* 1353.

¹⁹ 'Climate Action Tracker' <<https://climateactiontracker.org/>> accessed 5 November 2020; 'Climate Change 2014' (n 15); 'Global Warming of 1.5°C' (n 15).

harms to Indigenous peoples, for example.²⁰ Clearly, from an Indigenous environmental justice perspective, it will be essential that cultural dimensions of harm are acknowledged and included in L&D claims.²¹ Other questions remain. For example, will claims for L&D include loss of state territory due to sea-level rise or even loss of statehood?²² Would L&D to natural systems be viewed as harms that warrant a remedy? Answering these questions might involve evaluating the benefits provided to humans by ecosystem services, including those which underpin human livelihoods, as well as the ethical considerations of human-induced harms to non-human species.²³

2.2 Potential Claimants

Closely related to the question of harm is that of who should be able to claim a remedy. The question of who has experienced harm will often arise in the context of litigation, but can also surface in the context of insurance and funding mechanisms set up to compensate victims. Entities that may experience harm as a result of unavoided L&D include states, sub-national government actors, and a variety of non-state actors ranging from individuals to organizations and communities. As explored in subsequent chapters, examples of non-state actors who may be disproportionately impacted by L&D include Indigenous and non-Indigenous communities, migrants and refugees, children, women, and other vulnerable members of societies. Harm is, of course, not limited to humans, but includes human property as well as nature, from individual vulnerable species to whole ecosystems.

Not every entity potentially harmed by unavoided L&D will necessarily be entitled to a remedy within a given legal system. Each institution or legal regime that is asked to deal with unavoided L&D will be challenged to determine who will be eligible to seek a remedy; questions of legal standing will thus become important.²⁴ Where those eligible include children, future generations and non-humans, questions arise as to who will be able to seek a remedy on their behalf.²⁵

²⁰ Fankhauser and others (n 5); Olivia Maria Serdeczny, Steffen Bauer and Saleemul Huq, 'Non-economic Losses from Climate Change: Opportunities for Policy-Oriented Research' (2018) 10(2) *Climate and Development* 97.

²¹ Rebecca A Tsosie, 'Indigenous People and Environmental Justice: The Impact of Climate Change' (2007) 78 *University of Colorado Law Review* 1625; Sheila Watt-Cloutier, *The Right to Be Cold: One Woman's Story of Protecting Her Culture, the Arctic, and the Whole Planet* (Penguin Random House Canada 2016). For a more detailed exploration of climate justice from an Indigenous perspective, see also Chapter 12.

²² Rosemary Rayfuse and Emily Crawford, 'Climate Change, Sovereignty and Statehood' in Rosemary Rayfuse and Shirley Scott (eds), *International Law in the Era of Climate Change* (Edward Elgar Publishing 2012) <<https://ssrn.com/abstract=1931466>> accessed 5 November 2020.

²³ Sandra Diaz and others, 'Assessing Nature's Contributions to People' (2018) 359(6373) *Science* 270; Zinta Zommers and others, 'Loss and Damage: The Role of Ecosystem Services' (UNEP 2016) <https://uneplive.unep.org/media/docs/assessments/loss_and_damage.pdf> accessed 5 November 2020; Zinta Zommers, David Wrathwall and Kees Van der Geest, 'Loss and Damage to Ecosystem Services' (UNU-EHS Working Paper Series No 12, United Nations Institute for Environment and Human Security 2014).

²⁴ Christopher D Stone, *Should Trees Have Standing? Law, Morality, and the Environment* (3rd edn, Oxford University Press 2010).

²⁵ Randy Abate, *Climate Change and the Voiceless* (Cambridge University Press 2019).

A related consideration is whether L&D should be conceptualized as private harms (to individuals or groups in their private capacity) or as public harms (to societies as a whole, including future generations, or to public goods such as ecosystems), or both. The global and transnational scale of climate harms further suggests that insights as to the nature of claimants from both public and private international law will be relevant, alongside those from domestic legal systems.

For example, it is clear that states are harmed by climate change, with some states, notably small island developing states (SIDS), being particularly vulnerable. International tribunals, such as the International Court of Justice (ICJ), the International Tribunal for the Law of the Sea (ITLOS) and the Permanent Court of Arbitration, may grant standing to states who may bring claims for violations of their rights under international law.²⁶

Alternatively, the concept of *erga omnes* obligations at international law suggests that claims could be brought by one or more states on behalf of the international community as a whole for harm to the climate system or areas beyond national jurisdiction.²⁷ A public international law perspective that conceptualizes L&D as a crime would not obviously provide an opportunity for plaintiff states to bring L&D claims to the International Criminal Court, although prosecution of climate crimes has garnered scholarly and activist attention.²⁸ If conceptualized as crimes, domestic statutes that implement international criminal law raise a theoretical opportunity for domestic prosecution of climate crimes, or, where parallel civil liability regimes exist, for individuals and groups that have experienced climate harms to seek a civil remedy.²⁹

Private international law also offers insights into the nature of potential plaintiffs in transnational civil liability actions. For example, in many jurisdictions, foreign plaintiffs may bring claims provided that there is a real and substantial connection to the jurisdiction in which the action is brought. The presence of the defendant in the jurisdiction would often be a presumptive connecting factor, although judges may have discretion to decline to exercise

²⁶ Daniel Bodansky, 'The Role of International Court of Justice in Addressing Climate Change: Some Preliminary Reflections' (2017) 49 *Arizona State Law Journal* 689. See also Andrew L Strauss, 'Climate Change Litigation: Opening the Door to the International Court of Justice' in William CG Burns and Hari M Osofsky (eds), *Adjudicating Climate Change: State, National, and International Approaches* (Cambridge University Press 2009); Christina Voigt, 'The Potential Roles of the International Court of Justice in Climate Change-Related Claims' in Michael Faure (ed), *Elgar Encyclopedia of Environmental Law* (Edward Elgar Publishing 2016) 152–66.

²⁷ Craig Brown and Sara L Seck, 'Insurance Law Principles in an International Context: Compensating Losses Caused by Climate Change' (2013) 50(3) *Alberta Law Review* 541. See also International Law Commission, *Draft Articles on Responsibility of States for Internationally Wrongful Acts, with Commentaries* (2001) Art 48.

²⁸ 'Welcome to the Center for Climate Crime Analysis' (Centre for Climate Crime Analysis) <www.climatecrimeanalysis.org/> accessed 5 November 2020. See also 'Polly Higgins' (Polly Higgins) <<https://pollyhiggins.com/>> accessed 5 November 2020; Reinhard Gallmetzer, 'Prosecute Climate Crimes' in Joko Widodo and others (eds), *ourPlanet* (UNEP March 2017); Sébastien Jodoin and Yolando Saito, 'Crimes Against Future Generations: Harnessing the Potential of Individual Criminal Accountability for Global Sustainability' (2011) 7(2) *McGill International Journal of Sustainable Development Law and Policy* 115.

²⁹ W Cory Wanless, 'Corporate Liability for International Crimes under Canada's Crimes Against Humanity and War Crimes Act' (2009) 7(1) *Journal of International Criminal Justice* 201.

jurisdiction on the basis of *forum non conveniens* or similar doctrines.³⁰ Another procedural consideration of relevance to delineating the plaintiffs in L&D litigation is the use of class action certification, which allows an individual plaintiff to file an action on behalf of themselves and others who are similarly situated.³¹ This access to justice mechanism is already in use in youth climate litigation.³² In the future, questions may arise as to whether or how to delineate a global class in a L&D case, as has been the case in the consumer protection context, for example, where all consumers who suffered the same harm may be able to recover from a single settlement agreement.³³

A different issue may be whether particularly vulnerable claimants should be given priority to claim a remedy over claimants who are in a more privileged position, and if so, how this might be achieved. For example, if any vision of climate justice is to be taken seriously, access to justice for L&D for the most vulnerable must be a priority.³⁴ It appears problematic, then, that comparatively privileged claimants who reside in a developed country that is also the home state of a corporate fossil fuel defendant should face fewer legal hurdles than those that would confront a more climate-vulnerable plaintiff who happens to reside in a least developed country where no comparable defendant company has sufficient presence to ground personal jurisdiction. This is particularly problematic as those who reside in a least developed or most vulnerable country context may also face a lack of governmental capacity to offer adequate remedies to those who suffer from L&D. Moreover, individuals within these vulnerable states may be those who have contributed least to the climate problem on a per capita emissions basis, who may not have benefited from economic and social wellbeing built up over years of fossil fuel extraction, or who may live in isolation from the economic engine that drives greenhouse gas (GHG) emissions, as is the situation with many Indigenous communities.

Ultimately, the question is whether everyone should be entitled to L&D remedies, or whether access to climate justice should only – or first – be available to vulnerable groups within developing countries, or perhaps to the south within the north (for example, Indigenous peoples). In an ideal world it would be possible to adequately compensate all who suffer harm, or otherwise provide a remedy. In our very imperfect world, however, it is more likely that defendants will seek bankruptcy protection before full compensation has been paid out – if any

³⁰ See generally Amnesty International, 'Injustice Incorporated: Corporate Abuses and the Human Right to Remedy' (Peter Benenson House, Amnesty International 2014). See also Michael Byers, Kelsey Franks and Andrew Gage, 'The Internationalization of Climate Damages Litigation' (2017) 7(2) *Washington Journal of Environmental Law & Policy* 264; Sara L Seck, 'Environmental Harm in Developing Countries Caused by Subsidiaries of Canadian Mining Corporations: The Interface of Public and Private International Law' (1999) 37 *The Canadian Yearbook of International Law* 139.

³¹ See Chapter 21 for a detailed exploration of the role of class action suits in pursuing remedies for loss and damage.

³² See, for example, 'Ongoing Class Actions: Environment JEUnesse v Attorney General of Canada' (Trudel, Johnston & Lépérance) <<http://tjl.quebec/en/class-action/climate-change/>> accessed 5 November 2020.

³³ See, for example, 'Global Class Actions Exchange' (Global Class Actions Exchange) <<http://globalclassactions.stanford.edu/>> accessed 5 November 2020; Zachary D Clopton, 'The Global Class Action and Its Alternatives' (2018) 19(1) *Theoretical Inquiries in Law* 125.

³⁴ Sam Adelman, 'Climate Justice, Loss and Damage and Compensation for Small Island Developing States' (2016) 7(1) *Journal of Human Rights and the Environment* 32. See also Stephen Humphreys, 'Climate Justice: The Claim of the Past' (2014) 5 *Journal of Human Rights and the Environment* 134.

has been paid at all.³⁵ Furthermore, is there a duty on claimants to take steps to mitigate climate harms? In cases where such a duty is found to exist, a follow-up consideration is the extent of such a duty. For example, would a person suffering harm from climate change have a duty to relocate? Under what conditions? Different legal systems can be expected to reach different conclusions on these difficult questions, yet a lack of coordination among jurisdictions may leave the most vulnerable without access to justice.

2.3 Potential Remedies

Another challenge for legal institutions and regimes in responding to unavoided L&D is to consider appropriate remedies. It is clear from the work under the WIM that only some harm resulting from unavoided L&D can be adequately quantified in economic terms.³⁶ This will challenge the ability of legal institutions to offer appropriate remedies, and will result in increasing pressure to expand the range of remedies beyond monetary compensation. Already we are seeing climate litigation seeking a range of remedies, including declarations and various forms of injunctions to prevent undesired, or to mandate desired, action. The case of *Urgenda v The Netherlands* [*Urgenda*], where the court imposed a minimum emission reduction target on the government of the Netherlands, serves to illustrate what lies ahead.³⁷ Legal systems will increasingly be challenged to consider a broad range of remedies, including restitution, satisfaction and other forms of reparation.³⁸

Diverse legal approaches may lead to monetary damage awards. For example, fines imposed as a result of successful criminal or regulatory climate prosecutions could be deposited in environmental damages funds to be distributed to victims.³⁹ Where climate remedies are pursued through a civil action, it is possible that punitive damages could be awarded. For climate litigation involving a transnational dimension, it is more likely that a monetary damage award would be recognized and enforced by a foreign court than a non-monetary judgement.⁴⁰

If the distinction between loss as irreversible and damage as reversible is accepted, it may be useful to consider, separately, appropriate remedies for each. Legal systems will be challenged to consider whether and how to monetize harms such as loss of ecosystem services, loss of

³⁵ Lisa Benjamin, Meinhard Doelle, Colin Jackson and Sara L Seck, 'Reflections on Orphan Well Association v Grant Thornton Ltd 2019 SCC 5' (Dalhousie Environmental Law Blog 22 February 2019), <<https://blogs.dal.ca/melaw/2019/02/22/reflections-on-orphan-well-association-v-grant-thornton-ltd-2019-scc-5/>> accessed 12 July 2021.

³⁶ UNFCCC, *Report of the Warsaw International Mechanism for Loss and Damage Associated With Climate Change Impacts* (FCCC/SB/2014/4).

³⁷ *The Netherlands (Ministry of Infrastructure and the Environment) v Urgenda Foundation* [2019] 19/00135 (Supreme Court of Netherlands). An English translation of the decision can be found online at 'Rechtspraak', <<https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:HR:2019:2007>> accessed 5 November 2020.

³⁸ Maxine Burkett, 'Climate Reparation' (2009) 10(2) *Melbourne Journal of International Law* 509.

³⁹ 'Environmental Damages Fund' (Government of Canada) <www.canada.ca/en/environment-climate-change/services/environmental-funding/programs/environmental-damages-fund.html> accessed 5 November 2020.

⁴⁰ Amnesty International (n 30); Byers and others (n 30); Seck, 'Environmental Harm in Developing Countries Caused by Subsidiaries of Canadian Mining Corporations' (n 30).

species and loss of opportunity for children and future generations.⁴¹ An additional complication is whether funds or support would be available for professional evaluation as to the existence and nature of these types of harms, such as assessment of habitat loss and recovery for species at risk, as well as compensation for losses while habitat recovers.⁴² Drawing upon resilience theorists and others, would funding or support for recovery from L&D necessarily mean returning people to a place from which they came, or rebuilding ecosystems to the state that they were in 'before' (assuming a precise time can be identified)? Or would L&D be reconcilable with the transformation of socio-ecological systems from one state to another? Given the unique characteristics and constraints of the wide range of regimes challenged to deal with L&D, one must expect a range of approaches to these difficult questions. Legal systems that are able to devise effective remedies for L&D will have the potential to contribute to more fundamental societal transformations essential for resilient futures.⁴³

Litigation is only one avenue through which to seek a remedy. Others include compensation funds and insurance mechanisms. For example, crop insurance can offer remedies to farmers who may still be able to continue farming but who face some risk every growing season that their crop will be harmed or destroyed by climate-induced extreme weather events such as flooding, drought or storms. Another example could be that of SIDS, who might be best served through a combination of disaster risk reduction and management funds, risk transfer through insurance, and ultimately compensation and rehabilitation.⁴⁴

A final consideration with respect to remedies is the relationship between geoengineering and L&D. Might arguments be made that geoengineering measures to reduce GHGs in the atmosphere or oceans should be understood as the equivalent of clean-up of environmental contamination or remediation of environmental harm? This possibility forces us to ask who should get to decide (and how decisions should be made) about the appropriateness of steps to reduce L&D, and the harm that may result from such steps. In a traditional environmental enforcement action, measures taken to reduce the extent of environmental harm and to quickly clean up the harm may inform whether or not a (potential) offender is prosecuted, whether or not they meet a due diligence or reasonable care defence and whether or not they are subject to a harsh or lenient penalty in sentencing. How could these concepts be adapted to the problem of climate L&D?⁴⁵

⁴¹ Lynda Collins and Heather McLeod-Kilmurray, *The Canadian Law of Toxic Torts* (Thomson Reuters Canada 2014); Richard Lord and others (eds), *Climate Change Liability: Transnational Law and Practice* (Cambridge University Press 2012).

⁴² Diane Desierto, 'Environmental Damages, Environmental Reparations, and the Right to a Healthy Environment: the ICJ Compensation Judgment in Costa Rica v Nicaragua And The IACtHR Advisory Opinion on Marine Protection for the Greater Caribbean' (Blog of the European Journal of International Law 14 February 2018) <www.ejiltalk.org/environmental-damages-environmental-reparations-and-the-right-to-a-healthy-environment-the-icj-compensation-judgment-in-costa-rica-v-nicaragua-and-the-iacthr-advisory-opinion-on-marine-protection/> accessed 5 November 2020.

⁴³ Morrissey and Oliver-Smith (n 4); David Wrathall and others, 'Problematising Loss and Damage' (2015) 8(2) *International Journal of Global Warming* 274.

⁴⁴ Maxine Burkett, 'Rehabilitation: A Proposal for a Climate Compensation Mechanism for Small Island States' (2015) 13(1) *Santa Clara Journal of International Law* 81.

⁴⁵ These issues are explored further in Chapters 15 and 16.

2.4 Potential Defendants and Sources of Funds

Just as there is a broad range of possible plaintiffs seeking a remedy for harm resulting from unavoided L&D, there are many possible defendants. To date, defendants in climate litigation have included governments, companies that have contributed significantly to GHG emissions and companies that have actively hindered the development and implementation of effective climate policies.⁴⁶ Who will be an appropriate defendant will vary depending on the harm, the legal system called upon to provide a remedy and the conduct that contributed to the harm. States, state actors, state-owned enterprises, international organizations and private actors are all potential defendants depending on the nature of the harm, the plaintiff, the legal system involved and the remedies sought. Identifying appropriate defendants will be among the critical issues to be resolved for any legal system challenged to deal with liability or compensation for L&D, and one that is closely connected to the issue raised in the following section: the question of the actionable wrong.

From a public international law perspective, defendants in actions brought before international tribunals such as the ICJ must be states or international organizations, although in specific circumstances private actors may be subject to the jurisdiction of the deep seabed chamber of ITLOS.⁴⁷ International civil liability treaties in areas such as oil pollution at sea or nuclear accidents, while not directly applicable, could in theory offer inspiration for climate L&D litigation against multinational enterprises, or models for the creation of compensation funds with levies payable by polluters.⁴⁸

If claims were brought in international courts or tribunals alleging climate harms against perpetrator states, it would be necessary to identify which states to target. Would the most appropriate defendant states be determined based on historic emissions by state, or would per capita calculations be relevant? Would emissions trading under the climate regime be relevant to the determination of a state's cumulative GHG emissions? What relevance, if any, would be given to a state's nationally determined contribution (NDC) under the Paris Agreement? Would it matter if a state has met its targets, and – if the targets were adequate – a 'fair share' of emissions for a 1.5 degree world? Would arguments be made that emissions associated with the production of goods for export should be attributed to purchaser countries? Would all actions of the state since the start of global efforts to address climate change around 1990 be relevant?

⁴⁶ Dena P Adler, 'US Climate Change Litigation in the Age of Trump: Year One' (Columbia Law School, Sabin Center for Climate Change Law February 2018) <<http://columbiaclimate.law.columbia.edu/files/2018/02/Adler-2018-02-U.S.-Climate-Change-Litigation-in-the-Age-of-Trump-Year-One.pdf>> accessed 5 November 2020. See also Geetanjali Ganguly, Joana Setzer and Veerle Heyvaert, 'If at First You Don't Succeed: Suing Corporations for Climate Change' (2018) 38(4) *Oxford Journal of Legal Studies* 841; *Leghari v Pakistan*, WP No 25501/2015 No 1 (HC Green Bench, Pakistan 2015) <<http://sys.lhc.gov.pk/greenBenchOrders/WP-Environment-25501-15-31-08-2015.pdf>> accessed 5 November 2020.

⁴⁷ Tim Stephens, *International Courts and Environmental Protection* (Cambridge University Press 2009) 44.

⁴⁸ Brown and Seck (n 27); Rosemary Lyster, 'A Fossil Fuel-Funded Climate Disaster Response Fund under the Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts' (2015) 4 *Transnational Environmental Law* 125.

Beyond this, while some states have accepted compulsory jurisdiction of the ICJ, for example, others have shielded themselves through reservations.⁴⁹ Another question might be whether international organizations could be defendants in international climate actions brought in domestic or international tribunals: could it be argued that the World Bank has contributed to climate L&D through its continued support for fossil fuel development around the world?⁵⁰

Prosecutions of international criminal law are designed to be brought against individuals rather than states, and corporations remain beyond the reach of international criminal justice for now. Transnational civil litigation in the climate context could be brought against a wide range of defendants, although challenges might arise due to legal doctrines of separate corporate personality that favour entity over enterprise liability except in exceptional circumstances.⁵¹ A related challenge is how to bring claims in foreign courts against states or state-owned enterprises that might challenge the exercise of jurisdiction on the basis of the act of state doctrine, or comity of nations.⁵² Heede's 'carbon majors' research, which has been relied upon in the Philippines climate petition, recognizes that while the 'private' investor-owned carbon majors have contributed greatly to GHG emissions since the beginning of the industrial revolution, so have state-owned enterprises and nation states.⁵³

Clearly, evidence of attribution of harm will be crucial to identifying possible defendants, but in the climate context complexities abound. How should the responsibility of a carbon major be measured? Should responsibility (and liability) be measured purely on the basis of contributions to global emissions, or is where that carbon major is based, and the 'carbon budget' allocated to its home state as its 'fair share', relevant?⁵⁴ Would a defendant multinational enterprise be liable for all emissions arising from the enterprise as a whole, or would separate legal personality of corporate entities and the contractual nature of supply and value chain relationships inhibit legal responsibility? And who is responsible for downstream emissions arising from use of a product after it has been sold?

⁴⁹ See Strauss (n 26) for the challenges associated with climate litigation at the ICJ.

⁵⁰ See *Jam v International Finance Corp*, 586 US ____ (2019) finding the IFC has limited immunity and the commercial activity exception applies.

⁵¹ See for example, Rachel Chambers and Anil Yilmaz Vastardis, 'Overcoming the Corporate Veil Challenge: Could Investment Law Inspire the Proposed Business and Human Rights Treaty' (2018) 67(2) *International & Comparative Law Quarterly* 389; *Yaiguaje v Chevron Corporation*, 2018 ONCA 472; but, see also *Vedanta Resources Plc and another v Lungowe and others* [2019] UKSC 20.

⁵² *Nevsun Resources Ltd v Araya*, 2020 SCC 5. See also Sara L Seck, 'Revisiting Transnational Corporations and Extractive Industries: Climate Justice, Feminism, and State Sovereignty' (2017) 26(2) *Transnational Law & Contemporary Problems* 383, 404.

⁵³ See, for example, Greenpeace Philippines, 'Requesting for Investigation of the Responsibility of the Carbon Majors for Human Rights Violations or Threats of Violations Resulting from the Impacts of Climate Change' (Petition to the Commission on Human Rights of the Philippines, September 2015, updated May 2016) <www.greenpeace.org/static/planet4-philippines-stateless/2019/05/5a38951a-5a38951a-cc-hr-petition_public-version.pdf> accessed 13 February 2021; Richard Heede, 'Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers 1854–2010' (2013) 122 *Climatic Change* 229; Seck, 'Revisiting Transnational Corporations and Extractive Industries' (n 52).

⁵⁴ Expert Group on Global Climate Change with Jaap Spier (ed), *Principles on Climate Obligations of Enterprises* (2nd ed, eleven international publishing, 2020) <<https://climateprinciplesforenterprises.files.wordpress.com/2021/01/epwebpdf2.pdf>> accessed 26 January 2021.

Different issues might arise in the identification of those most appropriate to contribute to international funds, even as contribution does not equate with a finding of legal liability for climate L&D. For example, it has been suggested that some form of levy on international airline passengers or on bunker fuel used in marine transport, or even a fossil fuel majors carbon levy, could serve to gather funds necessary for L&D.⁵⁵ Of course, not all ideas put forward to finance or insure climate remedy and compensation require the identification of a defendant-like contributor. For example, suggestions have been made to impose a financial transaction tax to fund L&D,⁵⁶ while other commonly proposed insurance and finance tools include risk pooling, risk transfer, catastrophe risk insurance, contingency finance, climate-themed bonds and catastrophe bonds.⁵⁷ Concerns have been raised that some of these mechanisms would place the burden of purchasing coverage upon the most vulnerable, rather than making the polluter pay.⁵⁸

2.5 Actionable Wrongs

Closely connected to the selection of appropriate defendants (or persons potentially responsible for proving the remedy) is the issue of the actions, omissions or actionable wrongs that would hold the defendant responsible for contributing to the remedy. At one end of the spectrum, the 'wrong' may simply be the GHG emissions for which a company or state is responsible.⁵⁹ A L&D fund or insurance scheme, for example, could be set up on a no-fault absolute liability basis, similar to the oil pollution funds set up to contribute to the clean-up of oils spills caused by tanker traffic.⁶⁰

Actionable wrongs, however, can take a range of forms. Exxon, for example, is being sued in the US for misleading investors about the risk climate change poses to the company.⁶¹ A range of actionable wrongs are conceivable, ranging from lobbying against climate action domestically or internationally to funding others to undermine climate action. Some non-governmental business organizations funded by the fossil fuel industry, for example, have long had reputations for working to undermine consensus and ambition at the UN climate negotiations. Actions to mislead the public or governments about the science of climate change similarly could qualify as actionable wrongs similar to litigation in the tobacco context.⁶²

Actionable wrongs can also take the form of government action or inaction. The *Urgenda* case in the Netherlands and the *Juliana* case in the US are perhaps the most prominent examples to date, but actionable wrongs by state actors can range from the role they play in international negotiations to failing to set adequate domestic targets and failing to meet targets set.

⁵⁵ Some of these are explored in Alexis Durand and others, *Financing Options for Loss and Damage: A Review and Roadmap* (German Development Institute 2016).

⁵⁶ Ibid.

⁵⁷ Ibid.

⁵⁸ Burkett, 'Climate Reparation' (n 38).

⁵⁹ Heede (n 53).

⁶⁰ Lyster (n 5).

⁶¹ *People of the State of New York v Exxon Mobil Corp*, 2019 WL 6795771 (NY Sup Ct 2018) <<http://climatecasechart.com/case/people-v-exxon-mobil-corporation/>> accessed 6 November 2020.

⁶² Martin Olszynski, Sharon Mascher and Meinhard Doelle, 'From Smokes to Smokestacks: Lessons from Tobacco for the Future of Climate Change Liability' (2018) 30(1) *The Georgetown Environmental Law Review* 1.

Potentially, the dismantling of effective climate policy implemented by a previous government could be an actionable wrong by a government, as could efforts to undermine global ambition through a range of possible actions or inactions within the UN climate regime or other international fora seeking to raise the ambition of global action.⁶³ Indigenous peoples experiencing social and cultural loss due to climate change might also claim actionable wrongs against governments and other actors whose failure to reduce emissions is equivalent to a failure to protect and respect their rights to self-determination, or other rights such as free, prior and informed consent that are recognized in the UN Declaration on the Rights of Indigenous Peoples (UNDRIP).⁶⁴ The consequence of these rights violations is to undermine social and cultural resilience, including the legal orders of the Indigenous peoples themselves.

A difficult challenge will be to distinguish those actionable wrongs that arise in the climate context more generally from those that might be said to be specifically designed to secure a remedy for climate L&D. It has been suggested that states could implement climate liability statutes to facilitate actions brought in domestic courts against climate polluters, similar to the way in which tobacco liability statutes were imposed in certain developed countries to recoup state healthcare costs.⁶⁵ Domestic climate litigation brought by domestic plaintiffs has raised a multitude of causes of action against those plaintiffs' own governments as well as against business actors. Yet to date, only a few examples of climate litigation integrate a transnational dimension which has implications for the framing of the actionable wrong due to questions of choice of law. For example, if a low-lying island state sues a multinational fossil fuel company in the company's home state courts, should the (tort?) law of the multinational's home jurisdiction be applied to determine whether or not the multinational committed a wrong, or should the state be able to rely instead on its own climate L&D statutory cause of action (with a reversed burden of proof and reduced evidentiary burden)?

Irrespective of the cause of action, climate litigation will need to grapple with how to allocate responsibility where multiple contributors to the harm may be identified and proof of causation is elusive. This raises the possibility of joint and several liability (where plaintiffs may recover in full against one defendant who may then seek to recover from other equally responsible defendants), or alternate theories of liability such as material contribution to risk (where multiple defendants contribute to the risk of harm but no single defendant can be proven to be the necessary cause), or market share liability (where responsibility is allocated according to the defendant's share of global emissions).⁶⁶ Other models that could account for the challenge of attributing weather events to anthropogenic emissions include the fraction attributable risk allocation concept, drawn from epidemiological approaches,⁶⁷ or reliance on probabilistic event attribution (PEA) science.⁶⁸

⁶³ *Urgenda Foundation v The Netherlands* (n 37); *Juliana v United States of America* 217 F Supp (3d) 1224 (Dist Ct Or 2016).

⁶⁴ United Nations Declaration on the Rights of Indigenous Peoples, GA Res 61/295, T 12, UN Doc A/RES/61/295 (Sept 13, 2007) [UNDRIP].

⁶⁵ Byers and others (n 30); International Bar Association, 'Achieving Justice and Human Rights in an Era of Climate Disruption' (Climate Change Justice and Human Rights Taskforce July 2014); Olszynski (n 62).

⁶⁶ Byers and others (n 30); Collins (n 41).

⁶⁷ Allen and others (n 18).

⁶⁸ Hannah R Parker and others, 'Stakeholder Perceptions of Event Attribution in the Loss and Damage Debate' (2016) 17(4) *Climate Policy* 533.

Even if a plaintiff successfully argues that a defendant has committed the act necessary to find liability, defences or mitigating factors may ultimately detract from this result. How would courts address arguments that plaintiffs contributed to their own harm due to a failure to adapt? What about arguments that the plaintiff lacked capacity to adapt, or that there was a failure (by someone else?) to offer resources and other means for the plaintiff to adapt? What about ineffective implementation of adaptation measures? In the case of corporate defendants, questions could arise as to whether the defendant has met a reasonable care or due diligence defence – if so, which corporate social responsibility or climate-related industry standards might be relevant to this determination? Would proof of the establishment of an internal carbon-pricing policy be seen as a mitigating factor? What about evidence of a plan to transition to carbon neutrality (such as from coal mining to wind energy)? Could evidence of misleading regulators and the public by funding climate deniers serve as an aggravating factor for punitive damages or as a separate cause of action?

Different insights emerge if causes of action are considered from the perspective of public international law. For example, a claim rooted in state responsibility would need to identify an internationally wrongful act that would be attributable to the defendant state. This could include arguments that a state's failure to regulate non-state actors to prevent climate harms could be an independent wrong in itself. State financing and support of a wrongful act by another state could also be a wrong.⁶⁹ A state liability approach might hold a state strictly liable for environmental harm (that is, causing the harm is the wrongful act, a breach of the 'do no harm' principle).⁷⁰

A key question in the L&D context is how it will be determined if a state has committed a wrongful act for the purpose of state responsibility, in light of the requirements of the Paris Agreement. Are core international environmental law principles (such as do no harm) still relevant, or are they subsumed by the commitments of the Paris Agreement? What is the relationship between existing international human rights obligations to protect and ensure the realization of rights, and the commitments in the Paris Agreement?⁷¹ What about other treaty sources, including the UN Law of the Sea, with its obligations to protect the marine environment?⁷² Further, whose interpretation of contested international law norms will determine the answer to these questions? As is evident from the emergence of civil society human rights tribunals such as the Permanent Peoples' Tribunal on Human Rights, Fracking, and Climate Change, some would argue that the answers to these important questions cannot rest with the states and international bodies that have failed to protect the rights of the people of the world.⁷³

⁶⁹ Brown and Seck (n 27).

⁷⁰ Ibid; International Law Commission, *Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising Out of Hazardous Activities, with Commentaries* (United Nations 2006) <http://legal.un.org/ilc/texts/instruments/english/commentaries/9_10_2006.pdf> accessed 6 November 2020.

⁷¹ Margaretha Wewerinke-Singh, 'State Responsibility for Human Rights Violations Associated With Climate Change' in Sébastien Duyck, Sébastien Jodoin and Alyssa Johl (eds), *Routledge Handbook of Human Rights and Climate Governance* (Routledge 2018) 1–18.

⁷² Birsha Ohdedar, 'Loss and Damage from the Impacts of Climate Change: A Framework for Implementation' (2016) 85(1) *Nordic Journal of International Law* 1. See also Meinhard Doelle, 'Climate Change and the Use of the Dispute Settlement Regime of the Law of the Sea Convention' (2006) 37 *Journal of Ocean Development and International Law* 319.

⁷³ 'The Permanent Peoples' Tribunal' (The Permanent Peoples' Tribunal) <www.tribunalonfracking.org> accessed 6 November 2020.

3. STRUCTURE OF THE BOOK

Prospects for a comprehensive solution to L&D under the climate regime remain tenuous, though some progress has been made in recent years. This means that many international and domestic legal systems will increasingly be challenged to deal with aspects of L&D and to offer a remedy to those harmed. In Part II of this volume, we first consider key cross-cutting issues, including equity, perspectives from the global south and nature. We then ask subject-matter experts of key domestic and international legal systems to consider whether the respective legal system has a role to play in ensuring those who suffer harm related to loss and damage from climate change have access to adequate remedies. Each contributor considers both how ready the respective legal system currently is to offer appropriate remedies, and what changes may be warranted for the legal system to offer adequate remedies.

We have introduced in this chapter a few of the common elements of this analysis, such as who might bring claims for L&D, what remedies might be sought, who the remedies might be sought against and what the actionable wrong might be. These are issues that both domestic and international legal systems challenged to respond to claims for L&D will face. Of course, each will likely take its own unique approach, resulting in a patchwork of venues with a different mix of eligible claimants, respondents, remedies and actionable wrongs. It remains to be seen whether this patchwork will be able to eventually develop into a cohesive whole that offers appropriate remedies to all legitimate claimants. We return to these issues in Part III of the book.