16

Causation

Lisa Benjamin and Sara Seck[*]

16.1 INTRODUCTION

This chapter covers the legal test of causation and how it has appeared and been adjudicated in climate litigation. The causation test arises in climate litigation most often, but not always, in the guise of a tort-based standard which appears to pervade the approaches of many legal systems to managing climate harms. The definition of causation varies from jurisdiction to jurisdiction but will often involve some required proximity between the actions of the defendant and the harm caused to the plaintiff. Due to the nature of climate change, this proximity has in the past been difficult for plaintiffs to prove. However, as this chapter illustrates, issues of causation can also arise in other areas of law, including legal tests for standing and assessment of remedies for future harms.

The causation test has proven to be one of the major hurdles in some forms of climate litigation. This is particularly so for tort-based climate litigation, where plaintiffs must prove that the defendant's actions caused the plaintiff harm. The traditional approach of tort law in common law countries follows the general 'but for' test: but for the defendant's actions, the plaintiff would not have suffered harm. For example, in the United States (US), tortious conduct must be a factual cause of harm for liability to be imposed. Conduct is a factual cause of harm when the harm would not have occurred absent the conduct.[1] While the test varies between jurisdictions, in most jurisdictions the cause must precede the harm. The legal test for causation usually relies on a preponderance of the evidence or, in some common law jurisdictions, a 50 per cent or more probability that the breach of the duty caused the harm. In civil law jurisdictions, the test of '*conditio sine qua non*' (or

[*] Lisa Benjamin is an associate professor at Lewis & Clark Law School. Sara Seck is an associate professor at the Schulich School of Law and Marine and Environmental Law Institute at Dalhousie University.

[1] American Law Institute, *Restatement of the Law Third, Torts: Liability for Physical and Emotional Harm* (American Law Publishers 2010) s 26.

'without which it could not be') does not have a similar numerical threshold but does require that the court is convinced that a causal link exists.[2]

There are both general and specific elements of causation. General causation relies on the establishment of a cause-and-effect relationship between the act and the harm. In other words, whether the alleged causal factor can cause the *type of effect* from which the plaintiff suffers. Specific causation focuses on the specific harms alleged by the plaintiffs. In other words, whether the alleged causal factors did indeed cause the *particular injury* alleged by the plaintiff.[3] Specific causation involves a larger variety of factors, including the levels, duration, and proximity of exposure.[4]

16.1.1 *Causation in the Climate Context*

In the climate context, causation analysis involves highly complex and multi-tiered scientific inquiries about human influence on the climate.[5] Scientific studies usually adopt probabilistic inquiries, which may at first glance be unrecognisable from the traditional legal understanding of tortious causation. On a closer examination, however, there are synergies between climate and legal causation – both involve an assessment of probabilities.

In the climate context, the causal chain is often more extended than in other fields of litigation. Greenhouse gases (GHGs) are mixed in the atmosphere, and it is therefore difficult if not impossible to identify the emissions of one source of GHGs from another. Climate harms result from cumulative and aggregate emissions and the reduction of carbon sinks, making climate change essentially a stock problem. Climate impacts experienced now can be a result of historical emissions; therefore, time is also a factor. Emissions produced decades ago may only now be causing concrete impacts and harms. In addition, emissions made today are likely to contribute to future harms due to the existing stock of historical emissions. The duration between emissions, and the harm those emissions caused, can be problematic in proving specific causation. In addition, it is difficult to identify a specific defendant whose emissions caused specific harm to a specific plaintiff.

[2] Petra Minnerop and Frederike Otto, 'Climate Change Causation: Joining Law and Climate Science on the Basis of Formal Logic' (2020) 27 *Buffalo Environmental Law Journal* 49, 50.

[3] Samantha Lawson, 'The Conundrum of Climate Change Causation: Using Market Share Liability to Satisfy the Identification Requirement in Native Village of Kivalina' (2010) 22 *Fordham Environmental Law Review* 433.

[4] Christopher R. Reeves, 'Climate Change on Trial: Making the Case for Causation' (2009) 32 *American Journal of Trial Advocacy* 495.

[5] Michael Duffy, 'Climate Change Causation: Harmonizing Tort Law and Scientific Probability' (2009) 28 *Temple Journal of Science, Technology & Environmental Law* 185.

Advances in both attribution science and climate science generally are closing these causal gaps. The 2021 Intergovernmental Panel on Climate Change (IPCC) report identified that each 1,000 $GtCO_2$ of cumulative emissions is likely to cause a 0.27°C to 0.63°C increase in global surface temperature with a best estimate of 0.45°C.[6] This is called the 'transient climate response to cumulative CO_2 emissions'.[7] In other words, every tonne of CO_2 adds to the global warming effect; every emission counts. This finding can bolster broader approaches to causation in climate impact cases.

There are four main elements in the climate-related causal chain.[8] The first is the establishment of the relationship between cumulative GHG emissions in the atmosphere to increases in global mean temperatures. The second is the establishment of the relationship between temperature increases and harmful effects. The third is the attribution of a specific weather event (usually an extreme event) to general warming trends (this is sometimes called 'impact attribution' or 'event attribution'). An additional fourth element is source attribution (attribution of an actor's or project's contributions to global cumulative GHG emissions). Courts sometimes take different approaches to causation on this element, between liability for States as opposed to corporations.

The complex causal relationships described earlier are not always easily accommodated by the law. In Section 16.2, we will discuss how courts have grappled with these complexities. This section also provides background context to the theories of causation in tort law, the connection between causation and standing, and the nexus between causation and human rights claims and attribution science.

Section 16.3 provides an analysis of the state of affairs in climate litigation around causation in different types of cases. The first part of this section focuses on cases requesting redress for past climate harm or past actions (such as the issuance of a permit). As will be seen, some of these cases do not seek remedy for specific climate harms but rather seek to prevent ongoing and future GHG emissions. This focus on prevention is also prevalent in the policy cases discussed in the second part of Section 16.3, all of which request a cessation or reduction of emissions in order to prevent or mitigate future climate harm.

Section 16.4 then sets out what we consider to be emerging best practices in judicial approaches to causation in the climate context. Finally, Section 16.5 considers the replicability of these best practices in other jurisdictions.

[6] Richard P. Allen and others, 'IPCC 2021: Summary for Policymakers' in Richard P. Allen and others (eds), *Climate Change 2021: The Physical Science Basis, Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2021) 36.

[7] ibid.

[8] Duffy (n 5) 190–201. See Chapter 17 on Climate Causality.

16.2 BACKGROUND CONTEXT

16.2.1 *Causation in Tort Law*

Tort law is designed to remedy human-based harms. Therefore, taking a broader conceptual approach to the role of tort law and its remedial purpose can make it a more malleable and therefore useful legal concept in climate litigation. There are existing examples of where tort law has adapted in order to provide a fair remedy in complex circumstances. This approach to tort law, and specifically causation in tort law, can also contribute to emerging best practice in climate litigation – discussed in Section 16.4.

Examples of conceptual evolution in tort law related to causation include the recognition of collective harm,[9] where independent tortious actions of multiple defendants produce a single harm, but it is impossible to determine which actions of one or more defendants caused the harm. Another is the market share liability theory, where several defendants produce harmful products but only one caused the harm to a particular plaintiff. Under this theory, if a plaintiff cannot identify one defendant, she can claim against every manufacturer of the harmful products in proportion to its share of the market.[10] Another is the commingling product theory,[11] where multiple independent actors combine and the result of their cumulative products is to produce a single, indivisible harm.

Many of these theories have been developed over time by courts to apply in narrow circumstances, usually where the products are fungible and the plaintiff (through no fault of her own) is unable to identify one or all of the defendants responsible for the harm. Similarly, plaintiffs in climate cases are unable to identify one responsible emitter, due to the nature of GHGs (see Section 16.1.1). Courts could, and some have, expanded or adapted existing theories to accommodate the complex causal relationships involved in climate change. Failure to do so is likely to leave many plaintiffs without remedy. This flexibility is illustrative of emerging best practice and has been adopted in some cases highlighted later.

16.2.2 *Causation, Standing, and the Nature of Plaintiffs and Defendants*

Causation arguments arise in other areas of climate litigation beyond torts, such as in relation to the procedural hurdle of standing. It is often necessary to prove some element of causation for the purpose of establishing standing in order to proceed to the merits of the claim. The specific parties granted standing by the court will also impact the nature of the causative inquiry undertaken by the court.

[9] Duffy (n 5) 201.

[10] See e.g. US cases *Thomas v Mallett* 701 N.W.2d 523 (Supreme Court of Wisconsin 2005); *Fairchild v Glenhaven Funeral Services Ltd* [2002] UKHL 22 in the asbestos context where the UK Supreme Court approved a materially increasing risk of harm test instead of the traditional 'but for' test.

[11] Duffy (n 5) 216.

In US federal courts, for example, there are three elements to establish standing: injury, traceability, and redressability. The plaintiff must have suffered an injury in fact, which is fairly traceable to the challenged conduct of the defendant (a causation-type element) and which is likely to be redressed by a favourable judicial decision.[12] An injury in fact must be an injury that is an invasion of a legally protected interest, which is particularised, concrete, and actual or imminent.[13] The injury must be specific to the litigant and not theoretical.

However, cases have confirmed that the injury to be proved for standing does not have to be capable of sustaining a cause of action under tort law, and so the application of causation is separate and apart in a standing analysis. Therefore, a wider variety of injuries is usually accepted by US courts in order to establish standing than might be accepted under tort law, such as aesthetic, emotional, or psychological injuries. An example from the climate litigation world is the *Massachusetts v EPA* case,[14] where the Supreme Court held that Massachusetts had 'special solicitude' as a state, and a sovereign interest in the Environmental Protection Agency (EPA) exercising its authority under the Clean Air Act to regulate GHG emissions.

In another example, in *Funk v Wolf*,[15] a court in Pennsylvania found that the youth plaintiff did have a substantial, direct, and immediate interest. Funk was a 10-year-old who sued the Pennsylvania governor and public utility for failing to develop a comprehensive plan to regulate CO_2 emissions. Funk's interest was found to be direct if there is a causal connection between the matter complained of and the harm alleged. The court found that the interest is immediate if the causal connection is not remote or speculative. In this case, Funk's asthma prevented him from going outside and the right to enjoy public natural resources was harmed by ongoing environmental degradation (although the court found that the relief requested by the plaintiff was not redressable).

It can be difficult for an individual plaintiff to establish that they suffered a particularised injury to herself or to her property in the context of climate change that merits remedy. This is a particularly 'live' issue in the human rights context, and especially so for foreign plaintiffs. In the German *Neubauer* case,[16] the Constitutional Court granted standing to German youth complainants as well as complainants living in Nepal and Bangladesh as natural persons claiming duties of protection and violation of their fundamental rights.[17] The Court found that the plaintiffs had established an individual interest to challenge the German government's insufficient climate mitigation targets, despite the fact that many people

[12] US Constitution art 3(2).
[13] *Lujan v Defenders of Wildlife*, 504 US 555 (1992).
[14] *Massachusetts v EPA* 549 US 497 (2007).
[15] *Funk v Wolf* 158 A.3d 642 (Supreme Court of Pennsylvania 2017).
[16] *Neubauer and Others v Germany* [2021] 1 BvR 2656/18, 1 BvR 96/20, 1 BvR 78/20, 1 BvR 288/20, 1 BvR 96/20, 1 BvR 78/20 (German Federal Constitutional Court) (*Neubauer*).
[17] ibid [90], [101].

would be similarly affected by the government's restrictions in the future. The claimants argued that the GHG emissions reduction goals in the Federal Climate Protection Act were insufficient in light of the State's obligations under the Paris Agreement and Germany's constitutional human rights law. The Court observed that climate change 'is a genuinely global phenomenon and could obviously not be stopped by the German State on its own. However, this does not render it impossible or superfluous for Germany to make its own contribution toward climate change'.[18] Nevertheless, the Court ultimately rejected the claims of the complainants from Bangladesh and Nepal, citing in part the limits of German sovereignty under international law which would limit the State's ability to implement adaptation measures.[19] On the other hand, the German youth complainants were successful.

Despite these examples, hurdles relating to causation have contributed to other cases failing on the basis of standing. The early case of *Kivalina v ExxonMobil*[20] is an example of an attenuated causal chain leading to a court finding no standing on behalf of the plaintiffs. *Juliana v United States*[21] is a newer iteration of the standing problem, with the court finding a lack of redressability by the judiciary and therefore a lack of standing.

Given that causation requires proof that the defendant's conduct caused or is causing the plaintiff's harm or future harms, the success of climate litigation in which causation is an issue may be dependent upon which plaintiffs are allowed to proceed, and consideration of causation may seep into this analysis even if not made explicit. Plaintiffs in climate actions in which causation is an issue may find their standing challenged on the basis of whether or not they are individuals or groups, including non-governmental organisations (NGOs) seeking public interest standing, and whether or not actions can be brought on behalf of future generations.

The case law is not consistent on these questions, but the result of this initial stage in proceedings has implications for what must be established in the causation analysis. For example, a common challenge in the certification of climate-related class actions is the need for a court to ensure that members of the class raise common issues that can be resolved efficiently and effectively through the class action procedure.[22] In

[18] ibid [79], [99]–[101].

[19] ibid [173], [178]. The Court did acknowledge the particular exposure of the claimants to global warming in their countries, and the need for all states to take action. See ibid [174], 'This means that greenhouse gas emissions must be reduced to climate-neutral levels in Germany also'.

[20] *Native Village of Kivalina v ExxonMobil Corp* 696 F.3d. 849, 868–869 (9th Cir 2012).

[21] *Juliana v United States*, 947 F3d 1159 (2020). The plaintiffs have since amended their complaint and the district court has ruled that their case can proceed. See *Juliana v United States*, No 6:15-cv-01517-AA (District Court of Oregon 2023) (Opinion and Order).

[22] For example in *Environnement Jeunesse v Procureur General du Canada* [2018] 500-06-000955-183 (Quebec Superior Court) (*ENJEU*), the court found the class of young people being Quebec residents under the age of 35 was arbitrary.

Milieudefensie et al v Royal Dutch Shell,[23] class certification led to the bundling of the claims brought by Dutch-based NGOs to the extent that they serve the interests of Dutch residents and inhabitants of the Wadden region, including future generations. However, the court held that the interests of the world's population, both current and future generations, were not acceptable for bundling as part of these collective claims even as argued by the same Dutch-based NGOs.[24] The subsequent analysis, including with respect to causation, repeatedly refers back to the implications of climate change for inhabitants of the Netherlands and the Wadden region.[25]

The nature of the defendant is also important for the causation analysis, as evident when litigation against States is compared to litigation against non-State actors, especially business enterprises. For example, claims against States may raise concerns with regard to overarching climate policy,[26] or alternately permit approvals issued by government decision-makers and agencies may be appealed or judicially reviewed by a court.[27] An agency's consideration of a permit approval could be insufficiently narrow if it failed to take a hard look at the severity of the impacts of GHGs which would result from its approval. These could include global emissions, as well as national impacts, with courts sometimes, but not always, looking closely at the nature of the impacts on the plaintiffs themselves.[28] These issues have arisen in relation to agency approvals of fossil fuel-related activities in many different jurisdictions and are often intertwined with other considerations, including local social and environmental impacts as well as Indigenous rights. Alternatively, claims may be brought directly against fossil fuel enterprises and others, whether seeking remedy for harm arising from emissions, or raising concerns over the global and local impacts of the enterprise's climate policy.[29]

[23] *Milieudefensie v Royal Dutch Shell* [2021] ECLR:NL: RBDHA:2021:5339 (District Court of the Hague).

[24] ibid [4.2.1]–[4.2.6] The Dutch-based NGO ActionAid that was focused on developing countries and especially Africa was therefore completely excluded. Individual claimants were also not allowed to proceed as their individual interests were not found to be sufficiently separate from the common interests of the class.

[25] ibid [4.4.3], [4.4.10], [4.4.37], [4,4,53], and [4.4.54].

[26] For example *Urgenda Foundation v The State of The Netherlands* [2015] ECLI:NL:RBDHA:2015:7196 (District Court of the Hague) (*Urgenda District Court*).

[27] See Section 16.3.

[28] For example in *Klimatická žaloba ČR v Czech Republic* [2022] No 14A 101/2021 (Prague Municipal Court) 248, four individuals, an NGO, an ornithological society, and a municipality sued the Government and several Ministries in the Czech Republic for inaction on climate change and were found to have standing under art 82 of the Administrative Procedure Code as, in the context of the associations, there was a material and local relationship between the purpose of the associations and the subject of the legal proceedings, while the municipality also had standing since climate change was affecting the interests of those citizens living in its territory. There was a direct interference with the right to a healthy environment due to local manifestations of a global problem of climate change, through increased fires, drought, and floods. Note: This decision was overturned on appeal.

[29] For example *Milieudefensie* (n 23).

16.2.3 *Causation and Human Rights*

The nature of the causation analysis differs when human rights are invoked. This has been explicitly noted in the non-climate context with regard to the approach of the European Court of Human Rights (ECtHR).[30] Turton observes that while negligence actions in the United Kingdom (UK) require that the defendant's conduct was either a 'but-for cause of, or materially contributed to' the damage suffered by the plaintiff, it is enough in a human rights claim to establish that the defendant's conduct violated 'the relevant right'.[31] This reflects the approach adopted in the South Africa *Groundwork Trust* climate case concerning public law remedies and threats to constitutional rights: 'In terms of section 38 of the Constitution, litigants are entitled to approach a court for relief where rights *are infringed or threatened*'. There can be no doubt that unsafe levels of ambient air pollution directly threaten constitutional rights.[32]

The nature of human-induced climate change makes it challenging to assert that there is a direct link between GHG emissions by a particular defendant State (or company) and violations of any particular human right. However, this hurdle is not insurmountable. For example, the Dutch Supreme Court in *Urgenda*[33] applied the precautionary principle and drew upon ECtHR jurisprudence[34] to clarify that proof of causation is not required in human rights cases raising environmental hazards – including climate change – as State obligations under Articles 2 and 8 of the European Convention on Human Rights (ECHR) arise by virtue of the existence of a risk to rights.[35] Accordingly, even if it is uncertain that the danger will materialise, the State's duty is 'to take appropriate steps to counter an imminent threat'.[36] On the facts, given the evidence that climate change poses a real and genuine threat to the lives and welfare of Dutch citizens, and that sea level rise stands to render much of the Netherlands uninhabitable, the requirement that the State take action was held to be consistent with the precautionary principle: 'The mere existence of a sufficiently genuine possibility that this risk will materialize means that suitable measures must be taken'.[37]

[30] Gemma Turton, 'Causation and Risk in Negligence and Human Rights Law' (2020) 79(1) *CLJ* 148, 176.

[31] ibid 149. The author concludes that there is a need for clarification in the health care context as to whether causation is relevant to establishing liability in human rights claims as distinct from damages. ibid [175].

[32] *Groundwork Trust and Vukani Environmental Justice Alliance Movement in Action v Minister of Environmental Affairs and Others* (2022) 39724/2019 (*Groundwork Trust High Court*) [78].

[33] *State of the Netherlands (Ministry of Economic Affairs and Climate Policy) v Stichting Urgenda* [2019] ECLI:NL:HR:2019:2007 (Supreme Court of the Netherlands) (*Urgenda Supreme Court*).

[34] *Tatar v Romania* App no 67021/01 (ECtHR, 27 January 2009).

[35] *Urgenda Supreme Court* (n 33). ECHR art 2 imposes an obligation upon the state to protect the lives of citizens within its jurisdiction, while ECHR art 8 imposes an obligation to protect the rights of citizens to their home and private lives.

[36] *Urgenda Supreme Court* (n 33) [5.3.2].

[37] *Urgenda Supreme Court* (n 33) [5.6.2].

Similarly, in *Waratah Coal Pty Ltd v Youth Verdict Ltd and Ors*, the Land Court of Queensland held in favour of the claimants despite an alleged 'indirect and tenuous' causal link between a proposed coal mine and the violation of human rights.[38] The Court instead accepted the claimants' argument that there was a 'logical and rational connection' between the authorisation of the relevant applications and the subsequent harms caused by coal burning.[39] This was enough to establish a 'sufficient causal relationship to find the act [of granting the applications] has the capacity to limit a human right'.[40] As such, the Court recommended that the applications be denied by the respective authorities.[41]

Human rights-based claims may also be brought against defendant corporate enterprises, drawing upon the independent responsibility of businesses to respect human rights under pillar two of the 2011 United Nations Guiding Principles on Business and Human Rights (UNGPs).[42] The UNGPs were influential in the *Milieudefensie* case mentioned earlier.[43]

16.2.4 *Causation and Attribution*

There is a particularly important relationship between causation and attribution, and the latter is considered in detail in the next chapter. While it is still unclear what the relationship between attribution science and legal tests of admissibility of climate models is, there is clearly an important relationship between attribution studies and the evolution of legal tests of causation.

Attribution will – and already has – been influential in establishing the causal relationship between activities, events, and harms. For example, Heede's 2013 study has been cited in many lawsuits against carbon major corporations.[44] As outlined in Chapter 3 introducing attribution science in this Handbook, attribution studies illustrate how closely climate models have predicted extreme events and therefore how reasonably foreseeable such events have become. For example, the 2021 IPCC report lists the increased probabilities of the occurrence of extreme, one-in-fifty-year events, as temperatures increase.[45] Attribution studies can be helpful in creating a stronger causal nexus between events and harms and the emergence of best practices in causation tests.

[38] *Waratah Coal Pty Ltd v Youth Verdict Ltd* [2022] QLC 21 [1316].
[39] ibid [1352].
[40] ibid.
[41] ibid.
[42] OHCHR, 'Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework' (2011) HR/PUB/11/04.
[43] *Milieudefensie* (n 23).
[44] Richard Heede, 'Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers 1854–2010' (2014) 122 *Climatic Change* 229–241.
[45] Allen and others (n 6).

16.3 CASE LAW DEVELOPMENT – STATE OF AFFAIRS

This section approaches cases from a thematic as opposed to a jurisdictional lens. Here, we divide cases into those that focus on project-based emissions, on the one hand, and cases that focus on climate policy and regulation, on the other.

16.3.1 *Project-based Cases*

The cases covered here involve a challenge to government action, such as a permit or licence granted for a project which plaintiffs claim will increase GHG emissions or an inaccurate or incomplete environmental impact analysis. In these cases, we find courts struggling to map climate harm onto more traditional causation-based legal tests, even in the context of human rights claims. Courts seem more comfortable asking agencies to re-examine emission assumptions and requiring them to take a cumulative approach to the direct and indirect impacts of their approvals.

In some cases, however, courts have taken a broader approach to causation. Instead of requiring a finding of a causal nexus between actions and harms, they focus on establishing a reasonably foreseeable risk of harm. Some cases in this category have grappled with the indirect effect of CO_2 emissions from permit approvals, sometimes in conjunction with an assessment of local cumulative effects. Government agencies may struggle to account for indirect or scope 3 emissions from permits granted for extraction, for example. In addition, these cases may involve questions about hypothetical emissions which may occur absent judicial intervention.

Australian courts have been active contributors to the evolving jurisprudence on cases focused on project-based emissions. The 2006 decision *Gray v Minister of Planning* provides an early example of a successful challenge to a large coal mine under an environmental assessment process.[46] The applicant argued that GHG emissions from coal burning (scope 3) should be considered in the environmental assessment. Judge Pain agreed, holding that the GHG emissions should not be ignored despite the existence of many contributors globally and a

> sufficient proximate link between the mining of a very substantial reserve of thermal coal in NSW [New South Wales], the only purpose of which is for use as fuel in power stations, and the emission of GHG which contribute to climate change/global warming, which is impacting now and likely to continue to do so on the Australian and consequently NSW environment.[47]

[46] *Gray v The Minister for Planning, Director-General of the Department of Planning and Centennial Hunter Pty Ltd* [2006] NSWLEC 720.

[47] ibid [100].

In reaching its decision, the court identified the failure of the administrative decision-maker to 'take the principle of intergenerational equity into account', which was a legal requirement under the relevant legislation.[48]

In a 2016 case from Kenya, *Save Lamu v Republic of Kenya*,[49] an NGO successfully sued for a new environmental impact assessment (EIA) process due to lack of public participation, as well as omissions from the EIA for a coal-fired power plant on climate emissions and mitigation efforts. The National Environmental Tribunal found that due to the great importance of climate change issues, the EIA was incomplete and inadequate, particularly in the face of failures of the EIA to comply with the 2016 Climate Change Act, and the impact of the emissions on surrounding communities.

In the *Center for Biological Diversity v U.S. BLM*,[50] a Colorado court remanded the Bureau of Land Management's approval of a master development plan for natural gas wells and pads back to the agency on the basis that the agency's consideration of the approval was insufficiently narrow. The agency had failed to take a hard look at the severity of the impacts of GHGs that would result from its approval and the cumulative impacts of the emissions on air and water quality. The court found that combustion emissions would be an indirect effect of the agency's decision and the agency's approval (which did not consider these emissions) was arbitrary and capricious in that it failed to take a hard look at the foreseeable indirect effects of that combustion. In a corollary finding, the US Court of Appeal in the 7th circuit in *Zero Zone Inc v U.S. DoE* (2016)[51] found that the Department of Energy's consideration of indirect benefits, such as carbon reductions and the global benefit of GHG reductions, was not arbitrary and capricious.

In the 2019 Australian decision *Gloucester Resources Limited v Minister for Planning*,[52] the proponent appealed the Minister for Planning's refusal to grant development consent for the Rocky Hill Coal Project.[53] In considering the impacts of climate change, the court observed that: 'All of the direct and indirect GHG emissions of the Rocky Hill Coal Project will impact on the environment. All

[48] ibid [126]. For further information on the factual and subsequent legal reform consequences of this decision, see Anna Rose, 'Gray v Minister for Planning: The Rising Tide of Climate Change Litigation in Australia' (2007) 29 *Sydney Law Review* 729. The relevant legislation was the Environmental Planning and Assessment Act 1979 (NSW).

[49] *Save Lamu et al v National Environmental Management Authority and Amu Power Co Ltd* [2016] Tribunal Appeal No Net 196 of 2016 (Kenya Environmental Tribunal).

[50] *Center for Biological Diversity v US Bureau of Land Management* No 3:17-CV-553-LRH-WGC (District Court of Nevada 2019).

[51] *Zero Zone Inc v United States Department of Energy* 832 F3d 654 (7th Cir 2016).

[52] *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7 (*Gloucester Resources*).

[53] ibid [270]–[421]. The court concluded that there would be multiple direct and indirect negative impacts were the mine allowed to proceed, including social impacts on the community and particular impacts on Aboriginal peoples.

anthropogenic GHG emissions contribute to climate change'.[54] Chief Justice Brian Preston explicitly referred to causation, stating:

> There is a causal link between the Project's cumulative GHG emissions and climate change and its consequences. The Project's cumulative GHG emissions will contribute to the global total of GHG concentrations in the atmosphere. The global total of GHG concentrations will affect the climate system and cause climate change impacts. The Project's cumulative GHG emissions are therefore likely to contribute to the future changes to the climate system and the impacts of climate change. In this way, the Project is likely to have indirect impacts on the environment, including the climate system, the oceanic and terrestrial environment, and people.[55]

Notably, the court referred not only to the causation analysis in previous Australian jurisprudence[56] but also to *Massachusetts v EPA*[57] and the decisions of the Dutch District Court[58] and Court of Appeal[59] in the *Urgenda* litigation.[60]

In *Sharma*, eight Australian children brought a representative action against the Commonwealth Minister for the Environment seeking an injunction to stop the approval of the Whitehaven Vickery coal mine.[61] The children argued that the Minister owed a duty to take reasonable care not to cause them personal injury when exercising her statutory power to approve or not approve the extension of an existing coal mine. The first instance court agreed, holding that a reasonable Minister 'ought to have the children in contemplation when facilitating the emission of 100 MT of CO_2 into the atmosphere'.[62] The court rejected the Minister's

[54] ibid [514].
[55] ibid [525].
[56] ibid [518].
[57] *Massachusetts v EPA* (n 14) [519]–[520].
[58] *Urgenda District Court* (n 26) [4.90]

> From the above considerations, particularly in [4.79], it follows that a sufficient causal link can be assumed to exist between the Dutch greenhouse gas emissions, global climate change and the effects (now and in the future) on the Dutch living climate. The fact that the current Dutch greenhouse gas emissions are limited on a global scale does not alter the fact that these emissions contribute to climate change. The court has taken into consideration in this respect as well that the Dutch greenhouse gas emissions have contributed to climate change and by their nature will also continue to contribute to climate change.

[59] *State of the Netherlands v Stichting Urgenda* [2018] ECLI:NL:GHDHA:2018:2591 (Court of Appeal) (*Urgenda Court of Appeal*) [523]–[524] (rejecting the government's 'defence of the lack of a causal link').
[60] *Gloucester Resources* (n 52) [526]–[527]. The court also took into account that the proponent had not proposed to be carbon neutral by committing to the deployment of emission reduction technologies or carbon offsets; ibid [530].
[61] *Sharma and others v Minister for the Environment* [2021] FCA 560 (*Sharma First Instance*), overturned on appeal *Minister for the Environment v Sharma* [2022] FCAFC 35 (*Sharma*).
[62] ibid [491]. However, the application for a *quia timet* injunction was denied as the harm was not imminent, leaving open the question of whether it would be appropriate to consider carbon neutrality commitments of the proponent. ibid [508]–[512].

argument that she did not have control over each point in the causal chain,[63] holding instead that the Minister had conflated reasonable foreseeability and control, creating a requirement that there be a 'causal nexus between conduct and injury' instead of a real, reasonably foreseeable risk of harm.[64]

On appeal the judges of the Full Federal Court unanimously overturned the earlier decision but for different reasons.[65] All three judges were challenged to disaggregate the duty of care, causation, and damages enquiries.[66] According to Chief Justice James Allsop, disaggregating the duty of care from damage removes the duty from the 'very essence of the cause of action', with the plaintiffs seeking to impose the duty 'decades before any foreseeable harm which could have any connection whatsoever to the act in question' and 'decades before one knows whether there will be a cause of action'.[67] The reasonable foreseeability enquiry, Chief Justice Allsop suggested, 'has a causal element: The reasonable foreseeability is of the negligent act or omission *causing or materially contributing to the harm*'.[68] Justice Michael Wheelahan similarly held that the foreseeability must be of an injury 'compensable by the law of negligence and that is capable of being caused by a careless act or omission of the tortfeasor', not a prospect of causation 'so remote that it is far-fetched, or fanciful'.[69] Justice Jonathan Beach, on the other hand, disagreed with the conflation of causation with reasonable foreseeability, finding the initial judge's conclusion to be sustainable:

> the preponderance of authority does not demand that a legally acceptable pathway to ultimately demonstrating causation must be used in any reasonable foreseeability analysis. Moreover, who knows what the legally acceptable factual causation test will be in eighty years when a fully formed tort is likely to arise, if at all? And indeed, who knows what the science will show in eighty years in terms of factual causation?[70]

Ultimately, Justice Beach suggested that the High Court of Australia would be the appropriate court to 'engineer new seed varieties for sustainable duties of care, modifying concepts such as "sufficient closeness and directness" and indeterminacy to address the accelerating complexity, multiple links, and cross-links of causal relations'.[71] However, the decision will not be appealed.[72]

[63] ibid [278]–[288].
[64] ibid [282], [282]–[284].
[65] *Sharma* (n 61).
[66] ibid (Allsop CJ) [231], (Beach J) [538], (Wheelahan J) [872].
[67] ibid [231], [297], [298], [299].
[68] ibid [300].
[69] ibid [872]. At most the tiny increase in GHG emissions from the project approval would amount 'to a contribution to an *increased risk* of harm, but not a risk of contribution to the harm itself, still less a material contribution'. See ibid [882].
[70] ibid [443], [441]. Nevertheless, Justice Beach ultimately denied the duty of care due to a lack of sufficient closeness and directness, and so, indeterminancy. See ibid [363].
[71] ibid [754].
[72] '"They Will Not Forget Our Names": No Appeal, but a Vow to Keep Pushing for Climate Action' (*Equity Generation Lawyers*, 12 April 2022) <https://equitygenerationlawyers.com/wp/wp-content/

In the New Zealand private law case of *Smith v Fonterra Co-Operative Group Ltd and Ors*,[73] a Māori leader sought a declaration that the actions of some of New Zealand's largest GHG emitters or companies that supply products that emit GHGs[74] unlawfully caused or contributed to climate change.[75] At first instance the public nuisance claim was struck due to a lack of sufficient causal link,[76] while the negligence action was struck out as the court rejected the possibility that the 'but for' test could be avoided in the climate context.[77] A third novel cause of action was allowed to proceed to trial.[78] The Court of Appeal rejected Mr Smith's appeal on public nuisance and negligence and allowed it on the novel cause of action.[79] The Court reasoned that climate change is unique in that every person is both responsible for the harm and a victim of said harm;[80] the focus on 'net zero' created complications as it was unrealistic to suggest all GHG emissions are tortious;[81] and an action against a subset of emitters is an ineffective way to address climate change,[82] especially where the chosen defendants alone did not make a material contribution to climate change.[83] With regard to the negligence claim, the Court of Appeal distinguished proximity from foreseeability and was not persuaded by the argument that a sufficiently proximate relationship existed as Smith was part of an identifiable vulnerable class of plaintiffs, Northland coastal Māori, giving rise to knowledge of actual risk.[84] Moreover, despite several alternatives to the 'but for' test for causation being put before the court, it held that the 'class of possible contributors is virtually

uploads/2022/04/220412-Statement-from-Sharma-litigants-on-High-Court-appeal.pdf> accessed 26 February 2024.

[73] *Michael John Smith v Fonterra Co-Operative Group Limited and Others* CIV-2019-404-001730 [2020] NZHC 419 (*Smith High Court*).

[74] ibid. The defendants include dairy producers, steel mills, energy, and coal mining companies.

[75] ibid [12]. The plaintiffs sought injunctions requiring each of the defendants to produce or cause zero net emissions from their activities by 2030 by linear reductions in net emissions each year.

[76] ibid [63], [37].

[77] ibid [75], [83]–[88]. Among concerns raised by the court were the fact that other plaintiffs in a similar position might seek damages, creating complexity especially if overseas defendants were included in joint and several liability, as it would be difficult for New Zealand defendants to recover from them. See ibid [98].

[78] ibid [15], [101]–[104]. The novel claim was that the defendants owe the claimant 'a duty, recognizable at law, to cease contributing to damage to the climate system, dangerous anthropogenic interference with the climate system and adverse effects of climate change through their emission of greenhouse gases'.

[79] *Michael John Smith v Fonterra Co-Operative Group Limited and Others* CA 128/2020 [2021] NZCA 552 (*Smith Court of Appeal*). See Caroline E. Foster, 'Case Note: Novel Climate Tort? The New Zealand Court of Appeal decision in Smith v Fonterra Co-operative Group Limited and others' (2022) 24(3) *ELR* 224.

[80] *Smith Court of Appeal* ibid [18].

[81] ibid [20]–[23].

[82] ibid [27].

[83] ibid [19].

[84] ibid [101]–[103]. 'There Is No Physical or Temporal Proximity. There Is No Direct Relationship and No Causal Proximity'.

limitless' and that the inability to name or join a substantial share of contributors was a problem that could not be overcome without fundamentally changing tort law.[85] Leave to appeal to the New Zealand Supreme Court has been granted.[86]

Finally, the 2020 *People v Arctic Oil*[87] case in the Norwegian Supreme Court illustrates the challenge of trying to intervene at the exploration stage, combined with court reluctance to account for emissions from the combustion of oil and gas after it has been exported. While the Supreme Court held that citizens are protected from environmental and climate harms under the Norwegian Constitution, the extent of emissions from exported oil and gas arising from licences for future oil and gas exploration in the Barents Sea was too uncertain to conclude they would cause the requisite harm.[88] The plaintiffs appealed to the ECtHR in 2021, arguing that the licenses violate Article 2 (right to life) and Article 8 (right to respect for private and family life) of the ECHR.[89] An outstanding question is whether the outcome of a similar decision would be different in light of the International Energy Agency's 1.5 report[90] published in May 2021, which makes clear that there is no room for approving development in new oil and gas fields if the world is to limit global warming within the temperature goal of 1.5°C of the Paris Agreement.

16.3.2 *Challenges to Policy and Regulation*

Another category of cases requests policy or regulatory action by the State, either through a petition for rulemaking to a specific government agency like the US EPA or a request to the government as a whole to reduce emissions across all sectors in the future, on the basis of human rights or other claims. As described earlier, the first major US case that dealt with causation involved the State of Massachusetts

[85] ibid [105]–[113].

[86] *Michael John Smith v Fonterra Co-Operative Group Limited and Others* [2022] NZSC 35 (*Smith Supreme Court*). The appeal was successful, and the plaintiff's claim reinstated in *Michael John Smith v Fonterra Co-Operative Group Limited and Others* [2024] NZSC 5.

[87] *Greenpeace Nordic Association v Ministry of Petroleum and Energy* (2020) Case No 20-051052SIV-HRET (Norwegian Supreme Court) (*People v Arctic Oil*).

[88] ibid [70], [186], [234]. Among considerations was the additional licensing requirements to move from exploration to exploitation, and the uncertainty as to the nature of the energy sources that would be used to substitute (e.g. coal instead of gas). The significance of the *People v Arctic Oil* case is demonstrated in the 2024 *North Sea Fields* Case, where the Oslo District Court relied on the Supreme Court's finding that emissions from combustion fall within art 112 of the Constitution to find that the impact assessments for three ministerial decisions to allow plans for the development and operation of oil and gas fields are unlawful. The District Court held that the Petroleum Act and Petroleum Regulation must be interpreted in light of art 112 of the Constitution and therefore the impact assessments conducted were insufficient as they did not consider emissions from combustions.

[89] *Greenpeace Nordic and others v Norway* App No 34068/21 (ECtHR) <https://climatecasechart.com/wp-content/uploads/non-us-case-documents/2021/20210615_Application-no.-3406821_petition-1.pdf> accessed 26 February 2024.

[90] 'Net Zero by 2050 – Analysis' (*International Energy Agency*, May 2021) <www.iea.org/reports/net-zero-by-2050> accessed 26 February 2024.

submitting a petition for rulemaking to the EPA to regulate GHG emissions under the Clean Air Act as an air pollutant.[91] The EPA originally denied the petition on the basis that it had no authority under the Act to address global emissions and a causal link between GHGs and increases in global surface air temperatures was not unequivocally established. The agency also claimed that any regulation would be a 'piecemeal approach' to climate change that conflicted with the federal government's general approach to the issue. The agency therefore adopted a 'drop in the ocean' approach.

The US Supreme Court remanded the issue back to the EPA, finding that GHGs could be regulated as an air pollutant under the Act, and also dismissed the agency's findings on causation. Justice John Paul Stevens noted that even if the changes associated with climate change were widely shared, that did not minimise Massachusetts' interest in the outcome of the litigation. Although the agency claimed India and China would offset US emissions, the Court found the EPA 'overstated its case' in that regard:

> Agencies, like legislatures, do not generally resolve massive problems in one fell swoop, but instead whittle away over time, refining their approach as circumstances change and they develop a more nuanced understanding of how best to proceed … And reducing domestic auto emissions is hardly tentative … The U.S. transportation sector emits an enormous quantity of CO_2 into the atmosphere … A reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere.[92]

The case takes an incrementalist approach to emissions and the ability of regulatory action to ameliorate climate change. It is an early case that adopts a broader approach to causation. The case of *Center for Biological Diversity v NHTSA* in the 9th Circuit took a similar approach.[93] The court looked at the percentage of global emissions from US light trucks and the transportation sector overall from scientific reports. Finding those contributions to be considerable, the court held that the National Highway Traffic Safety Administration's failure to monetise the benefits of reducing CO_2 emissions from the US automobile fleet was arbitrary and capricious.

In a more recent case against the Dutch State, *Urgenda*, a Dutch NGO, successfully sought an order from the court directing the Netherlands to reduce its GHG emissions by 25 per cent relative to 1990 by 2020, although it was left up to the State to determine what specific measures it would take to comply.[94] Similar to the two previous cases, the nature of the relief sought was that the State

[91] *Massachusetts v EPA* (n 14).
[92] ibid [21].
[93] *Center for Biological Diversity v National Highway Traffic Safety Administration* 508 F.3d 508 (9th Cir 2007).
[94] *Urgenda Supreme Court* (n 33).

take preventative measures in the future to combat climate change. The Dutch claimants argued with reference to the State's human rights obligations under the ECHR, specifically Article 2 (right to life), Article 8 (right to respect for private and family life), and Article 13 (right to an effective remedy before a national authority).[95] Although Urgenda could not directly invoke these rights, it was able to rely upon Article 3.305a of the Dutch Civil Code to bring the claim on behalf of Dutch residents who are the victims.[96] Drawing on ECHR case law, the Dutch Supreme Court held that where there was a 'real and immediate risk' of harm under Articles 2 and 8 of the ECHR, the State's positive obligations were triggered to prevent such harm even without identifying specific prospective victims.[97] In upholding the decision of the Court of Appeal in 2019, the Supreme Court concluded 'Articles 2 and 8 ECHR relating to the risk of climate change should be interpreted in such a way that these provisions oblige the Contracting States to do "their part" to counter that danger'.[98] The Court rejected arguments that the State should not have to comply with its partial responsibility because other States were failing to comply, or that its emissions were so small compared to others that it would make little difference globally.[99] Instead, it drew upon the carbon budget concept: each reduction 'has a positive effect on combating dangerous climate change' as it leaves more room in the budget.[100] Similar to the US cases earlier, in *Urgenda* the Court adopted an incrementalist approach to amelioration of climate change – that every emission counts.

In the Canadian case of *Mathur v Ontario*, brought by seven young Canadian citizens against the province of Ontario, a motion to strike was refused.[101] The Cap and Trade Cancellation Act at the heart of this case effectively reduced Ontario's GHG reduction target as under previous legislation. The plaintiffs pointed out that, per the Paris Agreement, parties must progressively strengthen their emission targets over time – not weaken them.[102] Ontario had alleged that the appellants' assertions of harm were based on a 'chain of speculative assumptions', including that other provinces and countries could offset a lack of ambition in Ontario's GHG targets, and that catastrophic climate impacts could not be avoided by Ontario increasing its targets.[103] The Court was unpersuaded by these arguments, and took a progressive approach to

[95] ibid [5.1]–[5.10].
[96] ibid [5.9.1]–[5.9.3].
[97] ibid [5.3.1]–[5.3.2], [5.6.2].
[98] ibid [5.8].
[99] ibid [5.7.7].
[100] ibid [5.7.8].
[101] *Mathur et al v Her Majesty the Queen in Right of Ontario* [2020] ONSC 6918 (Superior Court of Justice) (*Mathur Strikeout*).
[102] ibid [37]–[40].
[103] ibid [89].

causation and the harm alleged.[104] The Court adopted the Supreme Court's more flexible standard of causation – 'sufficient causal connection' – which allows the circumstances of each particular case to be taken into account. It does not require that government-impugned conduct be the only or dominant cause of prejudice but is satisfied by a reasonable inference drawn on the balance of probabilities, sensitive to the context of the particular case. This flexible text also encourages the use of expert witnesses and social science evidence,[105] and it takes a broader approach to causation.

Two cases modelled on *Urgenda* have arisen in France, one brought by an NGO and the other by a municipality. In the former case, Notre Affaires à Tous brought action against the French government, alleging that its failure to take sufficient action against climate change was a breach of its statutory duty to act under domestic and international law.[106] In February 2021, the Administrative Court of Paris found a causal link between the French government's inaction in relation to GHG emissions and ecological damage even though it only comprised one part of the damage.[107] The Court ordered the government to disclose and justify its measures to achieve its GHG reduction targets.

Similarly, the community of Grande-Synthe and others brought action against the French government for their alleged failure to take sufficient action to reduce GHG emissions.[108] The claimants argued that this failure to act violated domestic and international law, including the ECHR, Paris Agreement, French Environmental Code, and the French Charter for the Environment. The Court found that this was justiciable, partly due to the fact that Grande-Synthe is a coastal town that is particularly susceptible to the adverse effects of climate change,[109] and held that the government's failure to take useful measures towards their climate commitments caused harm to the claimants. In 2020, the Council-d'Etat referred the issue back to the government and required them to justify their means of meeting climate commitments (40 per cent reduction in GHG emissions based on 1990 levels by 2030). In 2021, the Council d'Etat ordered the government to 'take all measures necessary' by the end of March 2022 to reduce GHGs and meet their climate commitments.[110]

[104] Sara Seck and Lisa Benjamin, 'Mapping Human Rights-based Litigation in Canada' (2022) 13(1) *JHRE* 178–211. While the Superior Court in the 2023 judgment on the merits did not ultimately uphold the challenge, it established that the Ontarian Government's insufficient climate mitigation efforts do contribute to an 'increase in the risk' of climate-change-related harms which threaten the plaintiffs' constitutional rights. The Court further found that the plaintiffs are not required to prove 'beyond a reasonable doubt' that their climate-related harms will occur; they only have to prove that the State's conduct contributes to an increase in the risk of the harm occurring. See *Mathur v Ontario* [2023] ONSC 2316 (*Mathur Merits*) [147], [150].

[105] *Mathur Strikeout* (n 101) [170].

[106] *Notre Affaire à Tous and Others v France* [2021] No 1904967, 1904968, 1904972, 1904976/4-1.

[107] ibid 34.

[108] *Commune de Grande-Synthe v France* [2020] N°427301 (Conseil d'Etat) (*Grande-Synthe*).

[109] ibid [3].

[110] ibid.

16.4 EMERGING BEST PRACTICE IN CAUSATION

There is a significant amount of jurisprudence on causation. As established in 3.1, cases that challenge project approvals offer an important opportunity to stop fossil fuel extraction and future emissions. Courts that adopt an indirect test of reasonable foreseeability of harm offer examples of best practice (e.g. *Gloucester Resources*). Unfortunately, courts in other similar cases continue to struggle to move beyond direct but-for causation analysis and the view that evidence of actual damage is essential, which is a highly problematic approach given the temporal and spatial dimensions of GHG emissions and resulting harms.

As established in 3.2, prevention-focused cases in the public law arena, where plaintiffs sue to prevent or reduce future emissions are the area of jurisprudence where an incrementalist and less stringent approach to causation has found the most success, illustrating emerging best practice (e.g. *Massachusetts*, v *EPA*, *Urgenda*, *Notre Affairs a Tous*, and *Grande-Synthe*). Plaintiffs point to the contributions that State-based emissions make to global emissions and, in conjunction with the Paris Agreement and latest scientific reports, convince judicial bodies that future emission reductions are important and closely connected to preventing future harm. In countries with robust human rights frameworks, such as in the European Union, this broader approach to causation has found the most judicial success.

Emerging best practices in causation acknowledges that traditional tort-related tests are insufficient, and fall short when the complexity of climate change and the inability to identify a concrete nexus between actions and harms is used by the judiciary as a limitation to the finding of causation. We identify this limited approach to causation as a 'drop in the ocean' approach – that any reduction in emissions by the defendant (being a State or non-State actor) will have limited or no effect on the harms experienced now, or to be experienced in the future, by the plaintiff.

Emerging best practices, in our view, does not apply the 'drop in the ocean' approach. Instead, it considers and applies a broader, more general approach to causation on the basis of newly evolving and best-available science and attribution studies. These judicial findings predominantly rely on collective goals articulated in the Paris Agreement and dismiss arguments that emissions from one company or country are not effective in addressing global climate change. Instead, judges rely on arguments that every emission reduction counts, with reference to recent IPCC and other scientific reports, and accept that these harms can be supported by science. Indeed, the 'drop in the ocean' approach has been explicitly rejected in many cases.[111] In our view, as more and more of these scientific reports are published, more examples of these best practices will appear throughout climate litigation cases.

[111] These include *Urgenda Supreme Court* (n 33) [5.7.1]; *Neubauer* (n 16) [199–202]; *VZW Klimaatzaak v Kingdom of Belgium and Others* [2023] 2022/AR/891 (Cour d'appel de Bruxelles) (*VZW Klimaatzaak Appeal*) [160], [283], [248]; *Massachusetts v EPA* (n 14) [4]; *Milieudefensie* (n 23) [4.3.5].

Once impacts within a country can be linked to global emissions, courts are more willing to consider national impacts as affecting and causing harm to plaintiffs. Emerging best practices draw broader causal inferences between GHG emissions, large emitters, and effects on the ground, and therefore elaborate on the traditionally narrow strictures of the cause-and-effect relationship in law. Prevention-oriented cases, including cases involving public law and government action, tend to apply a less stringent test to establish causation. These cases specifically avoid or reject the 'drop in the ocean' approach and therefore broaden the causal quality of the law to introduce more conceptual relationships, adding an element of fairness but also uncertainty into the law. While a broader approach to causation is welcome, it does mean that it is unclear how much or little emissions will be considered to add to the problem of climate change.

Another emerging trend is the growing litigation against corporations in the climate context, which at times employs this broader causal relationship. This is evidenced both in the human rights context for direct harms, and in the investor-related context in relation to financial losses.

An example of innovative causal relationships is highlighted in the Philippines' Human Rights Commission's investigation and final report.[112] The Commission found that a State is not absolved of its duty to protect against climate change impacts by the lack of a clear causal relationship between GHGs and climate change impacts. Further, the Commission established that not only carbon major companies but all enterprises along their respective value chains may be found responsible for human rights violations as a result of climate change impacts.

Unlike traditional litigation efforts, the Commission does not attempt to pin legal liability for damage on corporations. Rather, the investigation serves largely as an expository exercise to highlight the damaging role these entities play in the context of climate change. Using law as an expository tool in this way overcomes the causation hurdles experienced in traditional litigation against carbon major companies, and it can be equally effective in connecting the activities (and profits) of these entities with the human suffering that has been and will continue to be caused by climate change.[113]

The Commission's approach does, however, raise questions over causal relationships. The investigation's outcome is unable to trace a direct route between individual corporate emissions and concrete human rights harms. Instead, it provides a more nuanced and generalist approach, finding that corporations played a clear role in anthropogenic climate change and its attendant impacts. The Commission found

[112] Commission on Human Rights of the Philippines, 'National Inquiry on Climate Change Report' (CHRP December 2022).

[113] Lisa Benjamin, 'The Responsibilities of Corporations: New Directions in Environmental Litigation' in Veerle Heyvaert (ed), *Research Handbook on Transnational Environmental Law* (Edward Elgar 2020).

that, based on the evidence, carbon major companies could be found legally and morally liable for human rights violations arising from climate change in certain circumstances. These focused on circumstances involving obstruction, deception, or fraud, where the relevant *mens rea* (criminal intent) may exist to hold companies accountable under not only civil but criminal laws. This is an example of using causal inferences but tying them to specific legal responsibilities.

One especially innovative aspect of the Philippines investigation is the reliance placed by the plaintiffs upon the business responsibility to respect human rights of the UN Guiding Principles in framing the responsibilities of the carbon majors.[114] Of particular relevance to causation is Principle 13:

> The responsibility to respect human rights requires that business enterprises:
>
> (a) Avoid causing or contributing to adverse human rights impacts through their own activities, and address such impacts when they occur;
> (b) Seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships, even if they have not contributed to those impacts.

This conception of value chain responsibility, which acknowledges that business enterprises do not have full control over all aspects of their supply and value chains, provides a pragmatic framework from which to consider causation. Notably, the Commission further confirmed the responsibility of all entities within the value chain of carbon majors to remedy harms that they have caused or to which they have contributed in accordance with Principle 22 of the UNGPs.[115]

While the Philippines investigation was trailblazing for invoking the UNGPs, the 2021 *Milieudefensie* decision takes things a step further by clearly linking the UNGPs with the Paris Agreement targets, reinforced by reference to Shell's practices including reporting across scopes 1–3 in accordance with the GHG Protocol. The court considered at length the independent responsibility of business to respect human rights under the UNGPs as a global standard of expected conduct of all businesses wherever they operate, which requires companies to avoid causing or contributing to human rights impacts through their own activities, and to prevent and mitigate those arising from business relationships encompassing the entire value chain.[116]

Royal Dutch Shell (RDS) is the top holding company of the Shell group, comprising over 1,000 separate companies established and operating in over 150

[114] Sara Seck, 'A Relational Analysis of Enterprise Obligations and Carbon Majors for Climate Justice' (2021) 11(1) *Oñati Socio-Legal Series* 254.

[115] Commission on Human Rights of the Philippines (n 113) 95: 'when, through the conduct of human rights due diligence, a business enterprise is discovered to have caused or contributed to an adverse climate-related human rights impact, a remediation mechanism or process which is accessible, predictable, transparent, and legitimate must be made available. This may be through internal remediation mechanism or other legal processes'. See further 112–114.

[116] *Milieudefensie* (n 23) [4.4.16]–[4.4.17].

countries around the world.[117] The plaintiffs sought to order RDS 'to limit or cause to be limited the aggregate annual volume of all CO_2 emissions into the atmosphere (Scope 1, 2, and 3) due to the business operations and sold energy products of the Shell group' by at least 45 per cent relative to 2019 levels.[118] To do so, the plaintiffs relied upon the unwritten standard of care in the Dutch Civil Code, to be interpreted using human rights and 'soft law' instruments including the UNGPs, the UN Global Compact, and the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises.[119]

The court explored the 'distinctive aspects of responsibility for environmental damage and imminent environmental damage' with regard to climate change in the Netherlands and the Wadden region and how these distinctive aspects must inform the interpretation of 'event giving rise to the damage' under Article 7 of Rome II:[120] '[E]very emission of CO_2 and other [GHGs], anywhere in the world and caused in whatever manner, contributes'[121] to climate harms, and these only cause damage or imminent damage in conjunction with other emissions. Despite Article 7's reference to a single event, 'it leaves room for situations in which multiple events giving rise to the damage in multiple countries can be identified' and the Shell group corporate policy 'therefore constitutes an independent cause of that damage'.[122]

16.5 REPLICABILITY

As illustrated earlier, broader approaches to causation, found in early cases such as *Massachusetts v EPA*, have been adopted in an increasing number of jurisdictions. Indeed, several jurisdictions have explicitly rejected the 'drop in the ocean' approach in policy cases focused on prevention. Some courts have been influenced by this to adopt an indirect reasonable foreseeability of harm approach. This suggests that other countries, when deciding cases against government agencies for permitting decisions or when demanding government action, could also reject the 'drop in the ocean' theory and adopt a broader approach to causation. This may mean more robust decisions around emissions reductions, particularly in light of State-based commitments under the Paris Agreement and its global temperature goals as well as recent IPCC scientific reports that support the broader approach to causation. Emerging scientific and attribution reports could support generalisable principles that promote the broader approach – that the defendant's conduct contributed significantly to the plaintiff's harms. However, this may be more difficult in cross-jurisdictional claims involving foreign plaintiffs even where they have been granted standing.

[117] ibid [2.2.2], [4.1.1], and [4.4.16].
[118] ibid [3.1].
[119] ibid [3.2].
[120] ibid [4.3.2], [4.3.5].
[121] ibid [4.3.5].
[122] ibid [4.3.6].

A different question is whether cases that approach causation through a human rights lens are easily replicable in States that are both less engaged with regional human rights mechanisms and lack an enumerated human right to a clean, healthy, and sustainable environment in their Constitution (for example, Canada and the US). The 2022 United Nations General Assembly (UNGA) resolution recognising the right to a clean, healthy, and sustainable environment may create opportunities to inform climate causation with human rights in all States, especially in light of the voting record of 161 in favour with only eight abstentions.[123]

Reliance on the business responsibility to respect human rights as an international legal expectation to inform the interpretation of tort doctrines or other causes of action may be increasingly replicable across jurisdictions, with implications for the causation analysis. Beyond their endorsement by the UN Human Rights Council is the increasing evidence of their influence in courts and international fora.[124] Indeed, the UNGPs are also explicitly recalled in the UNGA resolution on the right to a clean, healthy, and sustainable environment. An additional source of UNGPs influence, also cited in *RDS* and by the Philippines Commission, is the OECD Guidelines for Multinational Enterprises, which added a chapter regarding the business responsibility to respect human rights in 2011 and was updated in 2023. This responsible business conduct guidance is backed by over fifty adhering States, including many that are home States to multinational fossil fuel companies. Together with the environment chapter and interpretations on climate-related matters provided by OECD National Contact Points in adhering States, the human rights-related climate responsibilities of enterprises are becoming increasingly clear, especially for multinationals that also adhere to carbon disclosure initiatives for emissions across scopes 1–3 like the GHG Protocol.

16.6 CONCLUSION

Causation arguments arise in many different kinds of climate litigation and at different stages from standing to tort. Cases that challenge project approvals offer an important opportunity to stop fossil fuel extraction and future emissions, yet many courts struggle to move beyond direct but-for causation analysis despite best practices that adopts an indirect test of reasonable foreseeability of harm. An emerging concern may be attention given by courts to net-zero commitments (e.g. *Smith*), which muddies the waters when it comes to accepting that fossil fuel extraction necessarily leads to problematic scope 3 emissions.

[123] The Human Right to a Clean, Healthy, and Sustainable Environment, UNGA Res 76/300 (28 July 2022). Both Canada and the United States voted in favour.

[124] David W. Rivkin and others, 'UN Guiding Principles on Business and Human Rights at 10' (*Debevoise & Plimpton*, 6 July 2021) <www.debevoise.com/insights/publications/2021/07/un-guiding-principles> accessed 26 February 2024.

Cases where plaintiffs sue to prevent or reduce future emissions stemming from government policy or regulation are clearly ripe for a broader approach to causation, and this area is where an incrementalist approach to causation has found most success. Cases such as *Massachusetts* v *EPA*, *Urgenda*, *Notre Affairs a Tous*, and *Grande-Synthe* all illustrate emerging best practices. Plaintiffs can point to the contributions that State-based emissions will make to global emissions and, in conjunction with the Paris Agreement and latest scientific reports, are able to convince judicial bodies that future emission reductions are important and closely connected to preventing future harm. In countries with robust human rights frameworks, such as in Europe, this broader approach to causation is finding the most judicial success. This is a key trend which we anticipate will continue. Where courts adopt a broader, best practice approach to causation, litigation can make a real difference both nationally and internationally in stemming the most catastrophic impacts of climate change.

We anticipate that human rights-based claims against corporate enterprises will increase, building on the approach to value chain causation in the UNGPs and emerging best practice cases. Disclosure-based claims are likely to be most easily successful. Plaintiffs will point to portfolio losses tied to reserve write-downs, or, in the case of utilities, infrastructure losses and/or litigation tied to damage, and the lack of disclosure of these risks by companies. Bankruptcy law is likely to be another area of law where causal relationships between climate-related risks and impacts, and bankruptcy will receive attention.[125] We also anticipate that climate litigation in the Global South, with State-owned enterprises as defendants, is likely to emerge, given the large emissions contributions these entities have made and continue to make. Causation in these instances may be easier to prove, given the large emissions and the State-sanctioned nature of corporate activities.

[125] Meinhard Doelle and others, 'Reflections on Orphan Well Association and Grant Thornton Ltd SCC 5' (*Environmental Law News*, 22 February 2019) <https://blogs.dal.ca/melaw/2019/02/22/reflections-on-orphan-well-association-v-grant-thornton-ltd-2019-scc-5/> accessed 26 February 2024.