Chapter 7
Legal Responses to Climate Change Induced Loss and Damage

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Abstract Legal issues are central to ongoing debates on Loss and Damage associated with climate change impacts and risks (L&D). These debates shed light, in particular, on the remedial obligations of actors most responsible for causing climate change towards those most affected by its adverse impacts. The aim of this chapter is to take stock of the legal literature on the topic, to identify potential legal approaches to L&D, identify challenges and to explore possible directions for further research. It looks at the feasibility of private and administrative climate change litigation while providing examples from around the world. Subsequently, we explore how human rights issues have been applied in international law to address L&D. The discussion particularly addresses the question whether the no-harm rule can be applied to climate change and would in fact trigger legal responsibility for greenhouse gas emissions. In addition, we examine relevant legal actions with relevance for L&D taken under the UNFCCC and the Warsaw International Mechanism on Loss and Damage. The chapter concludes with a synopsis of the various legal responses to L&D highlighting their premises, specific challenges and proposed remedies.

Keywords Climate change litigation · Climate regime · No-harm rule
Loss and Damage

7.1 Introduction and Preliminary Notes

Legal issues are central to the ongoing debate on Loss and Damage associated with climate change impacts (L&D). These debates on L&D shed light, in particular, on the remedial obligations of the actors most responsible for causing climate change

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towards those most affected by its adverse impacts. Ethical perspectives are explored in the chapter by Wallimann-Helmer et al. (2018) in this book, and the aim of the present chapter is to take stock of the legal literature on the topic, to identify potential legal approaches to L&D, and to explore possible directions for further research. While the Warsaw International Mechanism is an important institutional development, it does not appear as the unique entry point for providing redress for the adverse impacts of climate change. In outlining how diverse domestic or international legal frameworks could approach L&D, this chapter engages with the relation between legal arguments and necessary political or scientific developments at different scales of the regime complex for climate change.

The chapter is organised as follows. Section 7.2 presents different approaches to climate law litigation before domestic courts and highlights the most prominent cases relevant to L&D. Section 7.3 briefly discusses whether regional and international human rights law is of avail to those affected most by the impacts of climate change. Section 7.4 highlights the potential of international litigation based on principles of customary international law. Section 7.5 turns to the developments taking place under the UN Framework Convention on Climate Change, including the Warsaw International Mechanism on Loss and Damage (WIM). Section 7.6 finally discusses the different legal responses analysed and concludes with possible ways forward.

7.2 National Laws

Recent years have seen a rapid development of national laws related to climate change. From only a few climate laws in the pre-Kyoto Protocol era, there are now more than 1,200 laws and policies world-wide (Nachmany et al. 2017). Beyond a general focus on climate change mitigation, some of these laws have sought to address the damages caused by climate change.

Developments have also taken place before national courts, often driven by individuals or groups interested in bypassing the inertia of political institutions. Generally speaking, litigation is more likely in "common law" jurisdictions, as largely based on the doctrine of precedent—the application of the rule identified by a court in a given case to any similar subsequent cases. Most English-speaking countries apply a system of "common law," while other countries apply a form of "civil law," based on extensive codes covering fundamental areas of law.

Litigation can be based on private or public law. Through private law litigation, a person (individual or group) may seek a court's finding regarding the responsibility of another person or private entity for harms suffered. Through public law litigation, a person may seek a court's finding regarding the obligation of the government or another public administration to take a particular course of action, for instance to mitigate climate change, to adapt to the impacts of climate change, or to compensate for losses and damages. Whether litigation leads to a favourable court decision or not, it contributes to raising awareness and creating political momentum for further developments.

7.2.1 Public Law Litigation

Public law litigation puts the action or inaction of national authorities under scrutiny. In common law jurisdictions, such "judicial review" often takes place before an ordinary court, whereas civil law jurisdictions often have specific courts in charge of administrative and, mostly, constitutional oversight. Normally, public law litigation is based on the inconsistency of an act or omission of a national authority with a rule of higher hierarchical standing. For instance, a regulation could be struck by a court because it is incompatible with a statute, or the application of a statute could be suspended when it is incompatible with the constitution.

Public law litigation related to climate change has often focused on the obligation of a state to mitigate climate change rather than directly on ways to address losses and damages. The decision of the US Supreme Court in *Massachusetts v. Environmental Protection Agency*, for instance, forced the Environmental Protection Agency to regulate GHGs as air pollutants. As another example, in 2015, a decision of the District Court of The Hague in the case of *Urgenda Foundation v. The State of the Netherlands* found the government of the Netherlands in breach of its obligation to mitigate climate change under international law and ordered it to take measures to reduce national greenhouse gas emissions by at least 25% until the end of 2020 based on the 1990 levels. This judgment is currently under appeal and the final decision is still pending at the time of publication.

The Netherlands is one of very few jurisdictions where international law obligations are recognised a legal value similar to that of the constitution, thus providing a strong basis for public law litigation on the implementation of international commitments. Nevertheless, the success of the *Urgenda* case in a first instance judgment inspired many similar cases such as *Juliana v. United States of America* on the constitutional protection of future generations against climate change and decision W109 2000179-1/291E [2007] on the adverse ruling to a third runway on the Vienna Airport due to climate change concerns (which has however been reversed by the constitutional Court in June 2017).

Likewise, public law litigation can be used to push a government to promote climate change adaptation or otherwise address L&D. The case of *Ashgar Leghari v. Federation of Pakistan* regarded an alleged inconsistency of the limited efforts by the government of Pakistan to promote climate change adaptation with constitutional provisions on the protection of fundamental rights. In 2015, the High Court of Lahore recognised that "the delay and lethargy of the State in implementing the Framework offend[ed] the fundamental rights of the citizens which need to be safeguarded" (W.P. No. 25501/2015, at para. 8). Accordingly, the court ordered the government of Pakistan to take action to promote climate change adaptation under the supervision of an *ad hoc* panel of experts reporting to the court. As this case illustrates, redress can extend far beyond compensation.

The effect of public law litigation is limited by the rules on the basis of which the action or omission of national authorities can be contested. Domestic constitutional provisions on the protection of fundamental rights, invoked in the case of *Ashgar*

Leghari, are often limited to the territory of the state: they do not usually provide ground for a Court to recognise the obligation of a state to address L&D beyond its own jurisdiction. International law, on the other hand, can sometimes be invoked before domestic courts in support of public litigation, as illustrated in the case of *Urgenda*, although national courts are often reluctant to implement international law obligations.

7.2.2 Private Law Litigation

Private law litigation sheds light on the obligations of any person (individual or group granted legal personality within a particular legal system) towards another. Courts in common law jurisdictions apply various concepts of "tort" such as nuisance, trespass, or a risk-based regime of strict liability. By contrast, courts in civil law jurisdictions refer to particular provisions of their respective Civil Code on "extra-contractual responsibility." Absent more specific statutory developments, Courts in civil law jurisdictions could theoretically play an extensive role in interpreting such principle of responsibility to the context of climate change.

Private law litigation on L&D face a myriad of hurdles and, to date, most have been unsuccessful. A first hurdle is the issue of attribution. It is generally impossible to attribute a certain climatic event to human induced climate change, and certainly not to the emissions of a specific person or entity. While it is beyond doubt that GHG emissions, as a general proposition, cause harm, it is currently impossible to trace specific damages to certain emitters. Most legal systems require a direct causal relation for damages to be granted, but climate science only offers probabilistic attribution (see e.g. Pall et al. 2016). Some authors have suggested that courts should apply a modified general causation test as have sometimes been developed on "toxic tort cases" (Grossman 2003: 23). It would accordingly be sufficient to prove that GHG emissions are generally capable of causing damages and that a causal link between action and damage is *probable* thus render the requirement to attribute a specific climatic event to the emissions of a specific person or entity unnecessary (Grossman 2003).

A second hurdle is the deference of the courts to other branches of government. Courts have usually been reluctant to touch matters which require a fine-tuned balance between different interests, especially when the executive and the legislature have already seized themselves of the matter. These concerns may be phrased in the terms of the "political question doctrine" in the United States or in more or less implicit considerations of the "justiciability" of disputes brought before domestic courts in other jurisdictions. This is an even greater obstacle in civil law countries, where courts are posited to simply apply the law created by the legislative branch.

In *American Electric Power Co. v. Connecticut* the US Supreme Court regarded the alleged nuisance constituted by the greenhouse gas emissions of five US power utilities. It unanimously rejected the claim in 2011 on the ground that the regulation of greenhouse gas emissions by the Environmental Protection Agency precluded the

application of tort law of nuisance. In this view, compliance with domestic provisions on greenhouse gas emissions protects the power utilities from private law litigation. This doctrine was also one of the obstacles that precluded the inhabitants of the Alaskan village of Kivalina from obtaining damages from major hydrocarbons and power companies. In 2012, the Ninth Circuit Court of Appeals found that the Clean Air Act had displaced tort-based claims for damages and efforts to appeal before the US Supreme Court have been unsuccessful (*Native Village of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849 (9th Cir. 2012)) (see also chapter by Landauer and Juhola 2018).

A similar case was initiated by a Peruvian farmer against RWE, a German utility company. A German district court dismissed the lawsuit as it held that the plaintiff had not established that RWE was legally responsible for protecting the city of Huaraz from flooding and because of lack of direct chain of causation. In January 2017, the plaintiff filed an appeal, which was rejected on grounds of unclear causality and inadequacy. The case has since been taken to the higher regional court in Hamm, where it was finally admitted in November 2017 and has now proceeded to the evidentiary stage (see also chapter by Frank et al. 2018).

7.3 Regional and International Human Rights Law

Multiple regional and international human rights instruments recognise the obligation of states to respect, protect and fulfill the human rights of individuals within their jurisdiction. International institutions have been established to promote compliance with these obligations. These include regional human rights courts such as the European Court of Human Rights, the Inter-American Court of Human Rights and the African Court of Human and Peoples' Rights, as well as regional commissions. The Human Rights Council and its special procedures as well as international human rights treaty bodies have also contributed to naming and shaming governments failing to comply with their obligations.

The impact of climate change on the enjoyment of human rights are well recognised (e.g., Preamble of the Paris Agreement). The UN Human Rights Council, for instance, emphasised that "the adverse effects of climate change have a range of implications … for the effective enjoyment of human rights" (2015, recital 8). Various regional and international human rights that are affected by L&D include the right to life (e.g., International Covenant on Civil and Political Rights, art. 6; see also Human Rights Committee 2017, para. 65), the right to property (Protocol 1 ECHR, art. 1), the right to a clean environment (African Charter on Human and Peoples' Rights, art. 24) and the right to enjoy one's own culture (International Covenant on Economic, Social and Cultural Rights, art. 27). Yet, human rights law has generally been of little help in addressing L&D. While states have an obligation to take positive steps to protect and fulfill the rights of individuals within their jurisdiction, this obligation is limited to their available means. More importantly, it is generally understood that the obligation to protect human rights is limited to individuals within the states' own jurisdiction or, at most, to individuals under their effective control

(see e.g. *Al-Skeini v. UK*). Thus, from a legal perspective, states have no obligation to take into account the effects of their policies on the enjoyment of human rights outside their jurisdiction or effective control.

To comply with their obligation to protect and fulfill human rights, states must also take measures necessary to prevent human rights violations by private actors under their jurisdiction. However, this is again limited to human rights violations within the jurisdiction of the state. Efforts to promote responsibility of states for companies that commit human rights violations extra-territorially have seen increased support. For instance, the Commission on Human Rights of the Philippines, which has the power to investigate alleged barriers to the enjoyment of human rights, investigates whether carbon majors in causing climate change and ocean acidification violate human rights. The petition filed by Greenpeace Southeast Asia and Philippine Rural Reconstruction Movement is based partly on the expert drafted, legally non-binding Maastricht Principles on Extraterritorial Obligations of States in the Area of Economic, Social and Cultural Rights (ETO Consortium 2013). The investigation was still ongoing as of the time of writing.

However, also cases invoking the failure of a state to address L&D within its own jurisdiction appear extraordinarily unlikely to succeed before human rights institutions. The petitioner would first need to establish that greenhouse gas emissions of a particular state caused him or her to lose the enjoyment of a right within that jurisdiction. Then, further evidence would need to be provided that the cause of such loss in the enjoyment of a right was the failure of the state to take appropriate measures to prevent such greenhouse gas emissions. Lastly, the petitioner would have to rebut likely arguments by the state according to which the protection of human rights can be limited in the pursuance of objectives of general interest such as economic growth or development. Before an international human rights body, the petitioner would need to make the latter argument in a manner sufficiently compelling to persuade judges or commissioners that the state's balance of human rights protection with such objectives of general interest was not within the national "margin of appreciation," so-called by the European Court of Human Rights, in the protection of human rights.

For instance, in 2005, the Inuit Circumpolar Conference submitted a petition to the Inter-American Commission on Human Rights against the United States for their failure to prevent greenhouse gas emissions resulting in a violation of the human rights of Inuit communities. Following a public hearing, the Commission dismissed the petition (Chapman 2010).

However, cases are more likely to succeed when invoking the obligation of a state to protect the human rights of its population in isolation from its responsibility for climate change. An example of such successful proceedings before domestic courts was mentioned in Sect. 7.2 in the case of *Ashgar Leghari v. Federation of Pakistan*. Similar cases could be brought in in every circumstance where a state fails to take appropriate measures to protect its population against the adverse circumstances which may relate to impacts of climate change. Yet, this approach does not properly provide for redress for the impacts of climate change as it relies on the state on whose territory a person is present for the protection of the human rights of this

person. Thus, the burden of addressing L&D falls disproportionately on developing states rather than on those states responsible for most greenhouse gas emissions.

A particular question related to human rights law surrounds the protection of individuals displaced in circumstances related to climate change impacts. Some arguments have been made for an international protection of "climate refugees" either in application of existing international law or through the development of new international legal frameworks. In existing international law, however, a "refugee" is narrowly defined as a person fleeing out of a well-founded fear of being persecuted on the ground of his race, religion, nationality, membership of a particular social group or political opinion (Convention relating to the Status of Refugees, art. 1(A)(2)). Even when states have extended this definition to people living in a situation of generalised violence, environmental factors have not generally been recognised as a ground for international protection. For instance, claims for asylum based on the environmental conditions in Tuvalu were rejected by the New Zealand Immigration and Protection Tribunal in 2009 (*In Re: AD (Tuvalu)*). Arguably, the lives of people migrating from a state seriously impacted by climate change are threatened if they are returned to that state. However, national courts have previously considered that provisions of international human rights treaties dealing with the right to life, such as art. 6 of the International Covenant on Civil and Political Rights, did not prevent the expulsion of an individual whose country of origin is seriously affected by impacts of climate change (see e.g. for instance *Teitiota v Chief Executive of the Ministry of Business Innovation and Employment*) or was in violation of the principle of *non-refoulement* (see e.g. *AC (Tuvalu)*).

Further developments could, however, occur. Ongoing developments include for instance the Platform on Disaster Displacement which continues the work of the Nansen Initiative on Disaster-Induced Cross-Border Displacement and the work by the ILC on the protection of persons in the event of disasters (ILC 2016), as further discussed in the chapter by Heslin et al. (2018).

7.4 Customary International Law

National and international human rights laws are too limited in scope to fully address L&D. This is because climate change responsibilities and harms are geographically split. Most greenhouse gas emissions take place in industrialised nations, whereas most L&D affects individuals in the least developed or developing states. Human rights protection may reduce the harm caused to particular communities, including through adaptation measures, but its effectivity largely depends on the resources available to national authorities. Without enhanced support from the international community, the most vulnerable states may have little capacity to effectively protect their populations. This suggests that approaches to address L&D are more likely to take place at an international level.

There are two main sources of international law: customs and treaties (Statute of the International Court of Justice, art. 38(1)). Norms of customary international

law are constituted by the general practice of states accepted as law (Statute of the International Court of Justice, art. 38(1)(b)). A treaty is instead an agreement through which two or several states voluntarily commit to comply with certain obligations. When a state fails to respect its international obligations, including obligations stemming from customary international law and treaty law, this state has a secondary obligation to cease the wrongful act and perform its international obligation and to make adequate reparation to any state injured (ILC Articles on Responsibility of States for Internationally Wrongful Acts, arts. 29–31).

Section 7.4.1 examines whether excessive greenhouse gas emissions could constitute a breach of a norm of customary international law—the no-harm principle—and consequently entails an obligation to make reparation for the injury caused to the territory of other states. Section 7.4.2 turns to the treaty-based international climate law regime. Thus, we elude, for the sake of brevity, any discussion of other treaty-based regimes, such as the provisions on pollution of the marine environment contained in the UN Convention on the Law of the Seas or the work of the International Law Commission on the protection of the atmosphere.

7.4.1 The Obligation of States Not to Cause Serious Environmental Harm

The contemporary international legal system is based on the principle that states are equal sovereigns. States could not be equal sovereigns if it was permitted for one state to interfere with the internal affairs of another state in any manner that would seriously affect the latter. Likewise, states would not be genuinely equal sovereigns if one state was permitted to render the territory of another state uninhabitable or otherwise to significantly affect the conditions under which that territory can be used, for instance through causing serious environmental harms across international borders (see Order of 13 December 2013 in the joined proceedings *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica); Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)*, Provisional Measures ICJ Rep 2013, 398).

The no-harm principle, as a corollary of the principle of equal sovereignty, was first recognised in the 1941 arbitral award in the *Trail Smelter* case. This case concerned a dispute between Canada and the United States over air pollution arising from a smelter in Canada, which was brought by dominant winds towards the US State of Washington, causing serious environmental damages. In an oft-cited passage, the tribunal declared that:

> under the principles of international law […] no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties of persons therein, when the case is of serious consequences and the injury is established by clear and convincing evidence (*Trail Smelter Arbitration*: 1905).

This principle was confirmed in further decisions of international courts and tribunals (e.g. *Corfu Channel*, 22; *Case concerning the Gabcikovo-Nagymaros Project*, para. 53; *Case Concerning Pulp Mills on the River Uruguay*, paras. 101, 193 [hereinafter: Pulp Mills]). It was also recognised in international declarations (e.g. United Nations Rio Declaration on Environment and Development, principle 2; Declaration of the United Nations Conference on the Human Environment, principle 21; UNGA Res. 2996 (XXVII)) and, although less systematically, in treaties, including a mention in the preamble to the UN Framework Convention on Climate Change. In the *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons*, the International Court of Justice recognised

> the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment (para 29).

The no-harm principle requires states to refrain from engaging in activities which would cause significant transboundary harm and to prevent persons or entities within its jurisdiction to carry out such activities. Beyond this general understanding, the modalities of the no-harm principle are debated. As with any customary norm, it is difficult to establish the exact scope of this duty to prevent significant transboundary harm. In its previous cases, the ICJ has clarified little the content of the duty to prevent significant transboundary harm. Generally, it has been understood as one of due diligence (*Pulp Mills*, para 101; ILC 2001:154, para. 7). This means that a state is required to act in a way that can be expected from a "good government" (ILC 2001: 155, para. 17) and to exert its best efforts to minimise the risk of significant transboundary harm (ILC 2001: 154, para. 7). As such, the no-harm principle is an obligation of conduct, not of result. Thus, a state is not responsible for harm that occurs despite its reasonable efforts to prevent it or—in case that it is not possible—to minimise the risk. The International Law Commission has acknowledged in its work on the Articles on the Prevention of Transboundary Harm from Hazardous Activities that a different degree of care is expected from states with fewer capacities and economic difficulties (ILC 2001:155, para. 17). When applying this criterion to climate change, it must also be kept in mind that treaties may contribute in different ways to the development of customary international law. Despite the continuing work of the ILC on the role of treaties in identifying customary international law (see e.g. Wood 2015: 14 ff), there remain fundamental uncertainties on how the multilateral environmental agreements shape, crystallise and form the content of customary international law.

State practice and cases where the no-harm rule was invoked generally dealt with activities at or around a shared border. These activities included for instance emitting toxic fumes that caused damages in the woods of the neighbouring state, dredging in a shared river and altering its waters (e.g. *Lac Lanoux Arbitration*) or else polluting it through mills (e.g. *Pulp Mills*) or construction activities close to it. This raises the question whether the no-harm principle is applicable to climate change.

Climate change differs from most aforementioned cases in at least three pivotal points. Firstly, damages from climate change result not from a single activity of a state

but of its reliance on fossil fuels as an economic motor, i.e. from many activities. Secondly, damages from climate change results not from the conduct of a single state but from the concomitant conduct of multiple states, with the resulting harm not confined to a single state but affecting virtually all states. Thirdly and relatedly, the harm results not from any particular activity, but from an accumulation of activities over decades.

For these reasons, in the 1990s, the International Law Commission excluded phenomena such as creeping pollution and pollution deriving from ordinary economic activities from its work on the Articles on the Prevention of Transboundary Harm from Hazardous Activities (Rao 2000:9). The International Law Commission considered these situations too complex, and possibly too politically sensitive, to make statements about their legal nature. Although the Articles are not binding as such and do not reflect existing customary international law in their entirety, this is indicative of the difficulty of applying the no-harm principle to new situations.

The multiplicity of states contributing to climate change and impacted by its consequences at least complicates the application of the no-harm rule. Scholars have questioned the applicability of the no-harm principle to circumstances where harm is caused not directly by a single source, but by multiple diffuse sources over a long period of time, which accumulate and result in harm (Zahar 2014; Okawa 2010:307; Scovazzi 2001:61). Most cases before the international courts and tribunals are decided over situations where a single activity caused harm to another state. Environmental harm accruing because of the conduct of multiple states was discussed in the pleadings before the ICJ in one case. In their submissions on the *Legality of the Threat or Use of Nuclear Weapons*, some states raised concerns with the possibility that the repeated use of nuclear weapons over a relatively short span of time would create a "nuclear winter"—a cataclysmic upheaval of the climate system which could wipe out most of life on our planet (Mexico 1995, para 65; Egypt 1995, para 32; Ecuador, para D). When mentioning that the damages caused by nuclear weapons could not "be contained in either space or time" and had "the potential to destroy all civilization and the entire ecosystem of the planet," (*Legality of the Threat or Use of Nuclear Weapons*, para. 35) the International Court of Justice made no distinction between mediated damages and damages caused by cumulative causation but implied that the no-harm principle applied equally to both (see also Dissenting Opinion of Judge Weeramantry: 456–458; Mayer 2015:8).

If there is indeed an obligation for states not to cause transboundary environmental harms through greenhouse gas emissions, its modalities remain ill-defined (see also Mayer 2016b, 2018a). In particular, the scope of the no-harm principle is ill-determined. In general, the duty to prevent significant harm exists whenever a state has or should have been able to foresee the risk of harm. Unfortunately, there is no interpretation of these modalities of the no-harm principle by the International Court of Justice or sufficient clarification through the work of the International Law Commission. However, it appears possible to assume that a state must have had at least some scientific hints of the impacts of greenhouse gas emissions. Thus, the historical failure of a state to prevent activities generating excessive greenhouse gas emissions does not constitute a breach of the no-harm rule until at least some scientific evi-

dence suggested that they may have a serious impact on the climate system. It is also unclear to what extent a state must have been able to foresee the specific damage that might occur. Very few cases involving indeterminate damage have been decided by international courts and tribunals. In the *Naulilaa* case, an Arbitral Panel held that Germany should have anticipated that its attack on some Portuguese colonies would likely expose Portugal to further turmoil in an unstable colonial context, although Germany could not have foreseen the nature and extent of the turmoil that unfolded. On this basis, the Panel condemned Germany to the payment of an "equitable additional compensation" established *ex aequo et bono* (*Responsabilité de l' Allemagne à raison des dommages causés dans les colonies portugaises du sud de l'Afrique*: 1032-3).

Another area of uncertainty exists with regards to the stringency of the due diligence obligation of states under the no-harm principle. The International Court of Justice held that in order to fulfil its obligation to exercise due diligence in preventing significant transboundary environmental harm, a state must carry out an environmental impact assessment when there is a risk of such harm and, if the risk of significant transboundary harm is confirmed, notify and consult with any states potentially affected (see e.g. *Certain Activities and Construction of a Road*, paras. 104, 168). Where a state has acted in due diligence to prevent significant transboundary harm, it cannot be made responsible for harm that occurs nonetheless, in which case a state has to prevent further damages. This, however, does not result in a right for a state to veto an activity conducted in another state. Notably, in relation to environmental matters, the ICJ has often put emphasis on procedure, including the obligation to conduct an environmental impact assessment, rather than substantive obligations to refrain from a certain conduct. However, it is reasonable to assume that a state must ultimately refrain from certain activities if that is the only way to prevent significant harm. Nevertheless, the question of the actual content of the no-harm rule, especially in the context of climate change where procedural processes such as consulting with all potentially affected states is often unhelpful, will remain difficult to be answered.

States certainly are not under an obligation to stop all greenhouse gas emissions at once (see e.g. Voigt 2015:162). The scope of their due diligence obligation depends on their capacity. The obligation of all states under the no-harm principle is one of employing all their best efforts to limit and reduce greenhouse gas emissions from activities within their jurisdiction in order to prevent and minimise injurious effects on other states. In any event, the question whether a state has fulfilled its obligations of due diligence must be assessed in the light of the specific circumstances and the norms of customary international law emerging from the general practice of states accepted as law (see e.g. *Certain Activities carried out by Nicaragua in the Border Area*, Separate Opinion of Judge Donoghue, para. 10). Especially, the extent to which efforts of economic growth shape the understanding of due diligence remains unclear and should be further researched within the concept of sustainable development.

Thus, there remain many difficulties in defining the modalities of application of the no-harm principle in relation to climate change. Some authors such as Verheyen (2005: 146) conclude that the vagueness of the customary no-harm rule provides for space for interpretation. Certainly, only an authoritative interpretation by an interna-

tional court or tribunal, or possibly by the International Law Commission, could help disentangling the debates. In 2013, the International Law Commission has initiated a project on the protection of the atmosphere, which could possibly address the issue of climate change.

7.4.2 State Responsibility Following a Breach of the No-Harm Principle

The breach of an obligation is to be sanctioned for a legal system to be meaningful. Accordingly, it is a well-established principle of customary international law that a state whose conduct breaches its international obligation commits an internationally wrongful act entailing its international responsibility (ILC Articles on the Responsibility of States for Internationally Wrongful Acts, art. 1 and 2). Whereas the above section discusses whether and under which assumptions greenhouse gas emissions could amount to a breach of the no-harm rule, this section will look at the legal consequences resulting from these emissions, based on the hypothetical premise that they constitute an internationally wrongful act. It is important to bear in mind that certain questions, such as foreseeability and multiplicity of actors, are problematic not only concerning the characterisation of a state conduct as an internationally wrongful act, but also to assess whether any particular state is responsible for it.

State responsibility involves two main legal consequences: the continued duty of performance—which involves the obligation to cease a continuing internationally wrongful act—and the obligation to make reparation for any injury (ibid, art. 28–39). The obligations following a breach of the no-harm rule depends on the content of this obligation in the context of climate change, which is difficult to determine. As a consequence of the continued duty of performance, states would have to cease these emissions that are considered an internationally wrongful act. Of greater importance to the present discussion is the other consequence involved by the international responsibility of a state, namely, the obligation to make good for any injury caused by the internationally wrongful act. This obligation is generally analysed by reference to the judgment of the Permanent Court of International Justice in the case of the *Factory at Chorzów*, according to which "reparation must, as far as possible, wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed" (at 47). Accordingly, the International Law Commission concluded that "[f]ull reparation for the injury caused by the internationally wrongful act shall take the form of restitution, compensation and satisfaction, either singly or in combination" (ILC Articles on the Responsibility of States for Internationally Wrongful Acts, art. 34). "Full reparation" is understood as reparation for the full value of the injury. Restitution consists often in returning something wrongfully taken, whereas compensation—in practice the most common form of reparation—is the payment of the financial value of something that cannot

be returned or other damage done. Satisfaction relates to measures such as apologies, usually limited to reparation for symbolic harms.

For a claim for reparation to be successful, it is, presumably, necessary to establish that an activity has caused harm in a way that the harm would not have occurred without the activity. The causal link between greenhouse gas emissions and its adverse impacts is a long and complex one, which will make this argument difficult to establish. Yet, the law of state responsibility appears slightly more flexible in this regard than many national legal systems. Rather than a strict limitation to the "direct" consequence, injury in international law is extended to any consequence *unless* it is "too indirect, remote, and uncertain to be appraised" (*Trail Smelter Arbitration*: 1931; ILC 2001: 92, para. 10). Assessing the value of the injury on the basis of which compensation should be paid would however face many difficulties. Particular damages would have to be attributed to climate change in abstraction from the multitude of natural or social processes in which they unfold. Things that have no inherent economic value (e.g. human lives, health, culture, ecosystems) would have to be given one (see chapter by Serdeczny 2018). The value of future harms would need to be discounted at an arbitrary rate. Responsibility would then need to be allocated among states on the basis of their respective share of the wrongdoing, despite the indeterminacy of the threshold beyond which greenhouse gas emissions become excessive and wrongful and the contribution of the injured state to its damages (see e.g. Reis 2011:183). This would lead to never-ending controversies, nullifying the role of international law in settling international disputes through pacific means.

However, such a perilous analysis may not be necessary. When concluding that responsibility for an internationally wrongful act involves an obligation to make "full reparation," the International Law Commission referred to the usual practice of international courts and tribunals dealing with relatively small quantum of damages (ILC 2000: 2). Like in the *Naulilaa* case (*Responsabilité de l' Allemagne à raison des dommages causés dans les colonies portugaises du sud de l'Afrique*), larger injuries—such as reparations for wars and other mass atrocities, for unlawful trade measures, for nation-wide expropriation programs or for hazardous activities—have never led to full reparation, but rather to an agreement on lump-sum compensation. Relevant judicial decisions or international negotiations considered the capacity of the responsible state to pay, the need of the injured parties for reparation, the possible disproportion of the injury to the "culpability" of the responsible state, and the limits of the fundaments for a collective responsibility (Mayer 2017; Eritrea-Ethiopia Claims Commission:522, para. 22; Mayer 2016a). The International Law Commission has promoted in its work on the allocation of loss in the case of transboundary harm arising out of hazardous activities an approach to balance the interests of the responsible and the injured party (ILC 2006: 58ff).

7.4.3 Relationship Between the Climate Regime and the No-Harm Principle

A possible objection to the reasoning presented in this section relates to the existence of a treaty-based international climate law regime. Some scholars argued that the UN Framework Convention on Climate Change and following treaties as well as decisions adopted by the Conference of the Parties precluded the application of norms of international law such as the no-harm principle and the law of state responsibility for L&D (see Zahar 2015).

Such an argument would have to be based on the doctrine of *lex specialis* ("special law"). This notion prescribes that a more specific rule prevails over a general one. However, this is only the case when there is an actual norm conflict between the two rules. In this context, the International Law Commission stated that for the *lex specialis* doctrine to apply, "it is not enough that the same subject matter is dealt with by two provisions; there must be some actual inconsistency between them, or else a discernible intention that one provision is to exclude the other" (ILC 2001:140; see also *Mavrommatis Palestine Concessions*: 31). Absent such actual inconsistency or discernible intention to exclude the more general rule, both rules should be "be interpreted so as to give rise to a single set of compatible obligations" (ILC 2006:178).

There is certainly no ground to believe that states, as a whole, intended to exclude the application of the no-harm rule when establishing the international climate law regime. Similarly, inconsistencies between the climate regime and the customary no-harm rule do not necessarily arise (Mayer 2014; Verheyen 2005). The ultimate objective of the UNFCCC, to "prevent dangerous anthropogenic interference with the climate system" (UNFCCC, art. 2), is certainly not inconsistent with the no-harm principle, and the specific commitments made by states under successive international climate agreements do not exclude the existence of more demanding obligations under customary international law. The obligation to prevent significant transboundary harm, insofar as it may apply to emissions of greenhouse gases, should thus be interpreted consistently with the climate regime "so as to give rise to a single set of compatible obligations" (ILC 2006a, para. 4). Hence, the commitments entered into through the climate regime do not replace the no-harm rule—and *vice versa* –but both simultaneously work towards bringing states closer to compliance with their obligations arising under international law (see Mayer 2018b). In this regard a number of vulnerable states have made several statements emphasising that successive international climate change agreements do not in principle derogate the application of principles of general international law (see e.g. Declarations of Kiribati, Fiji, and Nauru upon signature of the UNFCCC and other declarations upon signature of the Paris Agreement. Arguably, the customary rule, should it apply and be triggered in the context of climate change, requires efforts that go beyond that of the climate regime in so far as those are not sufficient to actually prevent harm.

7.5 The International Climate Law Regime

After this overview of customary international law, the present section turns to international obligations based on climate treaties. Several treaties have been negotiated to address climate change, in particular the UN Framework Convention on Climate Change (UNFCCC 1992), the Kyoto Protocol (1997), and the Paris Agreement (2015). These treaties establish an institutional framework composed in particular by a Secretariat and a Conference of the Parties. The Conference of the Parties adopts decisions at its annual meetings. The treaties and decisions adopted under them form what is often referred to as the international climate law regime.

In contrast with customary international law, the international climate law regime is negotiated by states. More powerful states have naturally a greater say in the negotiations. Diplomatic and financial pressure is often exercised on weaker states. This political determination of the international climate law regime has significantly hindered efforts of vulnerable nations to bring up the question of L&D because, often, the most powerful states, responsible for the largest share of greenhouse gas emissions, are also the most influential in international negotiations on climate change.

In the following, a first subsection recounts the progressive *mezzo voce* recognition of something possibly akin to "responsibility" in the international climate law regime. A second subsection then discusses the initiation of a workstream dedicated to negotiations on L&D over the last decade (see also introduction by Mechler et al. 2018 and chapter by Calliari et al. 2018).

7.5.1 An Ambivalent Recognition of Responsibilities

In a declaration adopted in the Caracas Summit of the G77 in 1989, most developing states took a common position on climate change. They declared that, "[s]ince developed countries account for the bulk of the production and consumption of environmentally damaging substances, they should bear the main responsibility in the search for long-term remedies for global environmental protection" (*Caracas Declaration*, paras. II-34). Two years later, Small Island Developing States submitted a proposal for an instrument to address "loss and damage" associated with climate change by "compensat[ing] the most vulnerable small island and low-lying coastal developing countries for loss and damage resulting from sea level rise" (Vanuatu 1991:2).

Yet, no provision recognising the "main responsibility" of developed states or their obligation to "compensate" the most vulnerable nations was inserted in the final draft of the UNFCCC, adopted at the Earth Summit, in Rio de Janeiro, in June 1992. Rather, this treaty focused on forward-looking efforts to mitigate climate change in order to "achieve … stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC, art. 2). Nevertheless, since negotiations had been pursued on the basis of consensus, the position of developing states had been taken

into consideration, if only marginally. Developed states agreed to the insertion of elements of language containing constructive ambiguities which, without entirely rejecting the demands of developing states, did not fulfil them either.

One such provision is the principle of "common but differentiated responsibilities," which was inserted in the UNFCCC and in the Rio Declaration on Environment and Development adopted at the same time (UNFCCC, art. 3; Rio Declaration, principle 7). Including the word "responsibility" gave some satisfaction to developing states, but the word could be understood alternatively as a ground for reparation based on culpability or simply an obligation to cooperate based on each state's capacities. Thus, the position of the United States, reflected on their written statement on the Rio Declaration, was that this concept highlighted "the special leadership role of the developed countries, based on [their] industrial development, [their] experience with environmental protection policies and actions, and [their] wealth, technical expertise and capabilities." To avoid any doubt, the United States stated on record that they did not accept any interpretation of this concept "that would imply a recognition or acceptance … of any international obligations or liabilities, or any diminution in the responsibilities of developing countries" (United States 1992, para. 16).

Likewise, small island developing states secured the insertion in the UNFCCC of a provision recognising the duty of developed states to "assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects" (UNFCCC, art. 4(4)). This, again, was of a limited avail. "Meeting costs of adaptation" does not mean "meeting [all] *the* costs of adaptation" (Bodansky 1993). The obligation accepted by developed states was simply one of contributing *something* to the costs of adaptation in developing states.

A stream of negotiations on climate change adaptation appeared, for long, as a potential entry point for claims for compensation for losses and damages. Since the adoption of the UNFCCC and despite the creation of an adaptation fund under the Kyoto Protocol, international financial assistance to adaptation in developing states has remained limited, especially when compared to financial assistant to climate change mitigation (Buchner et al. 2015). A growing frustration of some advocates led them to push for a distinct conceptual framework within international negotiations on climate change, where claims for compensation could emerge. Yet, any mention of compensation or reparation was a non-starter.

7.5.2 The Workstream and Mechanism on Loss and Damage

A workstream on L&D was initiated in 2007 through the Bali Action Plan adopted by a decision of the 13th Session of the Conference of the Parties to the UNFCCC (COP13). The Kyoto Protocol had just entered into force and, although measures to mitigate climate change were being designed or implemented, there was a clear sense that much more had to be done through future agreements. Accordingly, the Bali Action Plan aimed "to launch a comprehensive process to enable the full, effec-

tive and sustained implementation of the Convention" (UNFCCC 2007, Decision 1/CP.13, Bali Action Plan, para. 1). Much attention was starting to be put on emerging economies and other developing states, whose greenhouse gas emissions were increasing much faster than the greenhouse gas emissions of developed states could possibly be reduced. In this context, "enhanced action on adaptation" was one of the concessions that developed states agreed in exchange of an increase commitment of developing states to "enhanced … action on mitigation" (UNFCCC 2007, Decision 1/CP.13, Bali Action Plan, 1(b) and 1(c)).

One of the items listed under "enhanced action on adaption" in the Bali Action Plan was "disaster reduction strategies and means to address losses and damages associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change" (UNFCCC 2007, Decision 1/CP.13, Bali Action Plan, para. 1(c)(iii)). The length of the concept reflected the difficulty of its insertion in a COP decision. There was no clear understanding on whether the two branches of this provision—"disaster reduction" and "loss and damage"—were necessarily related, that is, whether losses and damages would necessarily stem from (sudden-onset) disasters. Nor were there any clear understanding of the differences between "loss," "damage," "impacts," and the "adverse effects of climate change." Yet, a great achievement of the Bali Action Plan was the insertion of a provision hinting to the obligation of developed states to pay reparation for the injury caused by excessive greenhouse gas emissions.

The Bali Action Plan initiated a new stream of negotiations. However, this was largely side-lined, in the following years, by intense negotiations on climate change mitigation and the reluctance of developed states to virtually anything (Warner and Zakieldeen 2012:4). Not much had been achieved when, 3 years later, the Cancún Agreements recognised "the need to strengthen international cooperation and expertise in order to understand and reduce loss and damage associated with the adverse effects of climate change, including impacts related to extreme weather events and slow onset events" (UNFCCC 2010, Decision 1/CP.16, para. 25).

The Cancún Agreements created a "work programme" were negotiations could be pursued. Thematic areas were defined in 2011 and further explored in 2012 (UNFCCC 2011, Decision 7/CP.17, paras. 6–15; UNFCCC 2012, Decision 3/CP.18). More specifically, COP18 expressed a common desire "to enhance action on addressing loss and damage" (UNFCCC 2012, Decision 3/CP.18, para. 6). The following year, COP19 established the Warsaw International Mechanism on Loss and Damage (WIM), a subsidiary body of the UNFCCC (UNFCCC 2013, Decision 2/CP.19). The objective of the WIM was to "fulfil the role under the Convention of promoting the implementation of approaches to address loss and damage … in a comprehensive, integrated and coherent manner," including through "enhancing knowledge and understanding," "strengthening dialogue, coordination, coherence and synergies among relevant stakeholders," and "enhancing action and support, including finance, technology and capacity-building, to address loss and damage" (UNFCCC 2013, Decision 2/CP.19, para. 5). More specific arrangements were made at COP20, including the composition of the Executive Committee of the WIM, basic rules on procedure, and a 2-year workplan (UNFCCC 2014, Decision 2/CP.20, para. 5). This

2-year workplan was followed by a "five-year rolling workplan" adopted at COP22 (UNFCCC 2016, Decision 3/CP.22).

The inclusion of an article on L&D in the Paris Agreement was another ambiguous concession to developing states. Through Article 8, the Parties of the Paris Agreement "recognize the importance of averting, minimizing and addressing loss and damage … and the role of sustainable development in reducing the risk of loss and damage" (Paris Agreement, art. 8(1)). It places the WIM under the "authority and guidance" of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (Paris Agreement, art. 8(2)). It also highlights some areas of cooperation and facilitation such as on "early warning systems," "emergency preparedness," "slow onset events" and "events that may involve irreversible and permanent loss and damage" (Paris Agreement, art. 8(4)). Yet, Article 8 does not imply any substantive international legal obligation beyond a vague statement that the Parties "*should* enhance understanding, action and support … as appropriate, on a cooperative and facilitate basis with respect to loss and damage associated with the adverse effects of climate change" (Paris Agreement, art. 8(3)). In that sense, Article 8 of the Paris Agreement does not really go further than Article 4(4) of the UN Framework Convention on Climate Change.

Even such provision, however, was only inserted in the treaty after hard-fought negotiations and was accompanied by a caveat. COP21, in its decision on the adoption of the Paris Agreement, asserted that "Article 8 of the Agreement does not involve or provide a basis for any liability or compensation" (UNFCCC 2015, Decision 1/CP.21, para. 51). The legal nature of COP decisions has been discussed extensively by scholars (see e.g. Mace and Verheyen 2016; Verheyen 2005:67ff; Brunnée 2002; Gehring 2007; Churchill and Ulfstein 2000:639). However, it only states the obvious: nothing in Article 8 could be taken to imply any liability or compensation, as the language is weak and the concepts are undefined. Moreover, it goes without saying that this does not exclude the possible applicability of customary international law and possible arguments for state liability that stem from an alleged breach of the no-harm principle.

Ten years after the initiation of a workstream on L&D, few concrete steps have been taken. Instead, a work programme led to a 2-year workplan which led to a 5-year rolling workplan. The concept of L&D became more prominent in international negotiations on climate change but no agreement was reached on how to implement it. COP21 decision on the adoption of the Paris Agreement requested that the WIM establish a "clearing house for risk transfer" and a "task force … to develop recommendations for integrated approaches to avert, minimize and address displacement related to the adverse impacts of climate change" (UNFCCC 2015, decision 1/CP.21, paras. 48 and 49). These developments suggest a growing role of the WIM in sharing good practices and issuing recommendations, rather than providing compensation. It may thus replicate the evolution of the concept of adaptation in international negotiations on climate change, from claims for remedies for the wrongs caused by excessive greenhouse gas emissions in industrialised states, to a regime of international oversight on national measures supported only very partially by insufficient international financial support.

7.6 Discussion and Conclusions

This chapter has given an overview over the potential remedies in law to L&D. National laws have started to address this issue, including public law litigation forcing governments to address L&D in mitigation and adaptation efforts and private law litigation trying to hold private actors responsible for excessive greenhouse gas emissions. While most legal systems could theoretically be applied to excessive greenhouse gas emissions, their potential has not yet been fully recognised by national courts. The main caveat is the reluctance of courts to decide on something they perceive as a political decision: whether these emissions are falling within the competence of the court to decide. Human rights on the other hand do recognise their importance to the discourse relating to L&D. However, conceptual weaknesses regarding their application and enforcement make them an unlikely forum to address L&D. The enforcement of even these vague obligations is often reliant on their implementation in national laws and, on the international level, of the political will to exercise pressure on high emitting states.

We have also reviewed the applicability of the customary obligation not to cause serious environmental harm to other states and the viability of the climate change treaties to address L&D. While the no-harm rule is generally accepted as binding in international law, it remains unclear whether and, even more, how it applies to climate change. In the case of litigation before an international court or tribunal, it would be faced with a myriad of technical difficulties, not least the issue of causality and the required diligence to prevent or minimise harm. Certainly, the obligations under the UNFCCC, the Kyoto Protocol and the Paris Agreement do not replace the obligations under customary international law, but they may shape the understanding of what is to be considered as "best possible efforts" required under customary international law. Even where an international wrongful act is considered, difficulties remain to determine the quantum of remedies. The breach of an obligation entails the obligation to cease the wrongful act, if it is continuing, and to make good for damages it caused. However, how to disentangle the injury caused through climate change and the harm caused due to other socio-economic factors in the state concerned will remain difficult. In any event, it is unlikely that such a case would go before an international court or tribunal, as states would be reluctant to agree to their jurisdiction. Treaties, on the other hand, mostly provide for the jurisdiction of an international court or tribunal. However, it has become clear in their negotiation history that states are reluctant to accept legal responsibility. They thus fail to establish clear rules can be breached by parties.

Table 7.1 summarises the common legal approaches to climate change induced losses and damages and shortly highlights the main challenges to their efficacy and potential remedies to those challenges. The table is only supposed to serve as a potential starting point for further research and in no way intends to be complete or perfect in any way.

While the previous analysis of the available means to address L&D through the legal framework does not seem promising for real change, it is important to notice that

Table 7.1 Legal responses, their challenges and potential next steps

National laws			
	Public law litigation		Private law litigation
Rationale	States have obligations to protect their citizens from the adverse effects of climate change		Companies are responsible for damages from climate change and the costs of remedial action
Challenges	Dismissal based on lack of legal causality	Dismissal based on political nature of claim, international treaties not directly applicable to national courts	Dismissal based on lack of legal causality, complexity and multiplicity of causation
Potential remedy	Broader interpretation of causality; progress in attribution science	New or amendment of existing laws	Broader interpretation of causality; progress in attribution science. New or amendment of existing laws
Regional and international human rights law			
	Various human rights to life and safety		Refugee law
Rationale	States have an obligation to ensure health and safety of people within their jurisdiction		States have an obligation to grant asylum to climate refugees
Challenges	Cases are likely to be dismissed based on lack of legal causality	States have a "margin of appreciation" of human rights	No sufficient legal basis
Potential remedy	Courts apply a broader interpretation of causality requirements	Amending regional and international human rights treaties	Enhanced negotiation and work on international levels such as via the Platform on Disaster Displacement
Customary international law			
Rationale	States have a customary obligation not to harm other states and therefore must refrain from emitting greenhouse gases that cause harm to other states		
Challenges	States are unlikely to agree to the jurisdiction of the ICJ or an international tribunal		Content of the no-harm rule relating to climate change is unclear and not specific enough
Potential remedy	Addressing fears of escalating responsibility; limiting jurisdiction to specific problems		ICJ or international tribunal issues judgment or advisory opinion on that matter; further research on the relationship between climate regime and the customary no-harm rule; further research on required due diligence, especially relating to sustainable development
Climate change regime			
Rationale	States that excessively emit greenhouse gases are in breach of international treaties relating to the UN climate convention		
Challenges	Obligations are not clear and specific enough		
Potential remedy	Addressing fears of escalating responsibility; amending convention treaty text		Enhanced negotiations and work on the international level, such as through the WIM

the behaviour of states is not only motivated by binding, enforceable law. So-called soft law, i.e. law that is not legally binding, has often proved to be more effective than binding, enforceable international law. Although the pace of the progress of the WIM workstream can be frustrating, it shows that the issue of L&D is being picked up by the political bodies.

Previous treaties and institutions have developed from political bodies and strenuous negotiations—this evolution might also come true for the issue of L&D. Moreover, it seems that efforts at the national levels are increasing. While the overwhelming amount of the cases have been dismissed, it shows that public awareness is increasing. Mostly, it is not the science that is failing, it is the political will of the states. Understandably, what they fear is escalating responsibility for historic and present emissions. However, Gsottbauer et al. (2017) argue that a liability regime can under certain circumstances indeed promote precaution to prevent L&D. Moreover, law is flexible and can be adapted to the specific concerns of the states—provided there is political will to negotiation (see also Lees 2016). Thus, while legal responses to climate change induced L&D might not be as clear now, they probably will be at a later point in time.

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