

3VB-NUS Arbitration Lecture: 13 May 2025

Lecture notes (draft)

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It is an honour and a pleasure to deliver this lecture. I would like to start by thanking the organising institutions, as well as Chris and Stavros, for the kind invitation.

The purpose of today's lecture is to share some thoughts about perhaps the most complex aspect of the surge in climate litigation, namely the conceptualisation of liability for climate harm. I will do so in a **purely academic capacity**, and my remarks must be understood as observations about a phenomenon that is unfolding before our very eyes, and not as the expression of personal stances.

Context

I should mention, at the outset, that the **climate for speaking about the climate** has changed very significantly in the last few years, and particularly the last months. The topic has become something of a taboo. A possible indicator to take the temperature are the vicissitudes of two **World Bank presidents** in a period of less than two years. In 2023, David Malpass announced his resignation following controversy about his climate change denial stances, whereas in recent months Ajay Banga has been careful to reframe climate investments in terms of job creation, energy access and development, to avoid crossing its main shareholder. **Europe**, properly understood as a continent, has been largely spared from the backlash against discourse about climate change, although the same cannot be said of other topics, such as Gaza. But the topic of climate liability may well be another matter altogether, if one judges by the clamp down on climate activism and the positions of some States in the hearing of early December of 2024 before the International Court of Justice in the advisory proceedings on climate change.

But again, my purpose is only to analyse this important issue from an academic perspective and canvass some of its main overall features.

A word about what I will understand here by “**legal theories of liability**”. I use this expression to refer to a normative explanation of why someone is liable or responsible, under the law, for a certain negative outcome: climate harm. The expression encompasses a wide range of normative explanations or legal bases, with boundaries difficult to set specifically. This is necessary given that many legal systems and types of claims are involved.

Yet, however broad, the expression is also intended to **exclude a range of legal theories** that have been mobilised in climate litigation seeking “forward-looking” remedies. Claims against companies or States for lack of diligence or mitigation ambition, claims for misinformation or greenwashing or misleading investors, and several other types of claims, may raise issues of liability, but they can be distinguished for present purposes from what my main focus is here: **legal theories that may ground a tort-like claim for climate harm that has materialised.**

The specific context of **investment arbitration**, where an investor can seek reparation for the harm resulting from the unlawful conduct of a State, does not normally raise this type of issue. Specifically, claims for climate-related measures must also be distinguished from my focus here. This is because such claims are not about holding an entity responsible for the climate harm it has caused, and they do not raise the complex issues of attribution, causation and harm conceptualisation at stake here. One could hypothetically think of situations where investment arbitration would be a vehicle to establish liability for climate harm, for example if a State is sued for causing climate-related harm to an investor, or if a State brings a counterclaim against an investor for causing climate harm. But I am not aware of any such cases.

Following this brief contextual observations, I will **structure my presentation in three main parts**. First, I will very briefly introduce some empirical elements relating to climate change and its impact. This will provide the necessary context to better understand issues of attribution, causation and the conceptualisation of climate harm. Second, I will identify the main ways in which liability for climate harm has been

structured or articulated in legal terms. Third, I will discuss in more detail an ongoing case, the advisory proceedings on climate change before the International Court of Justice, from the specific standpoint of the topic of this lecture, liability or responsibility for climate harm.

Part I: Empirical elements

Let me start with some empirical elements. The fundamentals of climate change will be well trodden ground for much of this audience. The United Nations Framework Convention on Climate Change (UNFCCC) provides a **useful definition of climate change** (slide), namely “*a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods*”. In this definition, we have already two core aspects of any theory of liability for climate harm, namely “change” and “attribution” (slide). Both are complex.

Let’s take “**change**” first. Climate change is a highly condensed and aggregate expression, which we need to flesh out to determine which change is deemed to be harmful. The expression climate change would normally evoke an increase in global average temperature (slide), or sea-level rise or the increased frequency or severity of certain extreme weather events. But there are many other faces of climate change, and they can be seen at a range of scales, from abstract to highly specific. Think of floods, wildfires, disease vector redistribution or food crises. What face we focus on is relevant to understand and attribute climate harm. There is indeed a difference between interference with the climate system as such, the types of extreme weather events driven by it, a specific extreme weather event, and the specific harm suffered by an entity.

What connects the myriad manifestations of climate change together is their complex but common cause, emissions of greenhouse gases, mainly carbon dioxide and methane, from fossil fuel use and land-use change (slide). This link is unequivocal, in the terminology of the Intergovernmental Panel on Climate Change (IPCC)

Yet, from a legal liability standpoint, the alignment of empirical or scientific attribution and legal attribution, in some cases, may require a fuller causal link, from “**end-to-end**”

or, in other words, from the emissions of a specific entity all the way to a specific injury or loss of another entity (slide).

This is possible in the current state of attribution science (slide). Empirical understanding of end-to-end attribution follows **three, or perhaps four, steps: first, the link between the specific GHG emissions of an entity over a period of time** (relevant emissions can follow different scopes 1 to 3) **and changes in the global average temperature can be established in the current state of science** ([through a reduced complexity models]); **second, the link between temperature change and localised types of impacts** ([pattern scaling methods – models – are used to generate scenarios linking climate change to regional/local impacts]) **and/or specific extreme weather events can be clarified** ([probabilistic event attribution – multi-model and multi-method - according to the protocol of the World Weather Attribution Group or “storyline approaches” which plausible causal reconstructions, much like building factual explanation in a case]); **third, a specific injury or damage can be linked to the type of event or the specific event** ([whether through an empirical damage function in the model or through more direct before-after reconstruction])

Although end-to-end attribution is empirically possible, it is **not necessarily required** from a legal standpoint (slide). This takes me to the discussion of the legal theories on the basis of which a certain climate-related loss may be attributed to an entity deemed responsible for it (slide)

Legal articulation of liability for climate harm:

In **legal terms**, such considerations may be addressed in a range of ways (slide). One frequent approach is to acknowledge that an activity (technically a “transaction”) necessarily carries some undesired side effects (technically “negative externalities”) which must be borne financially (technically “**internalised**”) by the participants in the transaction (technically the “polluters”). Another is to allocate the responsibility for the harm arising from a given activity to the entity that conducts the activity, irrespective of the level of diligence displayed by it (**strict liability**). This is another form of internalisation, in that the activity or transaction remains lawful and the reparation due is standardised. A third approach is to consider that the conduct or **transaction is unlawful**

and that all the harm resulting from it must be fully repaired. The normative explanations linking the conduct, the harm and the extent of the reparation are more complex here, because the allocation is much more fact-sensitive. For ease of reference, I will refer to these three broad approaches, respectively, as “cost internalisation”, “strict liability” (or general legal allocation), and “responsibility” (or specific empirical/legal allocation).

The broad policy and legal principle underpinning **cost internalisation** is the polluter-pays principle, as formulated in a wide range of international and domestic legal instruments. To be clear, the polluter-pays principle can be used also in other contexts, including strict liability and responsibility, but its focus is not to prohibit the transaction but to make participants to the transaction pay (or internalise) the cost borne by third parties.

This can and has been applied in the context of climate change in a **growing number of carbon pricing mechanisms** (slide) It is of course very complex to say what the “social cost of carbon” to be internalised is. An entire sub-field of economics is devoted to this question, which is, at the end of the day, a normative one. A 2023 study (Nature article) of some 6000 estimates concluded that the social cost of emitting an extra tonne of carbon dioxide has been estimated to as little as USD 9 and as much as USD 525, hardly a base for a clear carbon pricing signal. The World Bank’s *State and Trends of Carbon Pricing 2024* identified 75 carbon pricing systems (carbon taxes and trading schemes) in operation, covering nearly a quarter of global emissions but setting in their great majority a rather low carbon price inconsistent with the Paris Agreement, as shown in this slide. To put it simply, we are “well below” the cost of carbon that would be consistent with the Paris goal to limit temperature increase to “well below 2C”, and even more so for the 1.5C target.

Moving to **strict liability**, perhaps the most debated development are the so-called “**climate superfund**” statutes in US States such as Vermont, New York and possibly others soon, including California, Maryland and Massachusetts. These statutes are modelled on the federal Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA**), better known as Superfund, which concerns the decontamination of hazardous waste sites. Under the climate superfund statutes, companies which have emitted more than a certain threshold of greenhouse gases (1

billion metric tonnes, for Vermont) in a given past period (1 January 1995 to 31 December 2024, for Vermont; 1 January 2000 and 31 December 2024 for New York) are strictly liable to make “compensatory payments” covering a share of the costs incurred by the State as a result of climate change proportional to their share of emissions (estimated by means of “source attribution”). The identification of the “responsible parties” is of course a key aspect. These are entities “engaged in the trade or business of extracting fossil fuel or refining crude oil” which, according to a determination of the regulator, have reached the requisite level of emissions in the reference period. The volume of payments that may have to be made could reach billions of USD.

With respect to “**responsibility**”, according to one estimate (Zero Carbon Analytics/Sabin Center), as of March 2025, some 68 lawsuits had been filed specifically seeking financial redress for climate harms (slide). A bit less than two thirds (43) are still pending, and approximately half of all 68 cases concern the fossil fuel industry. Most cases have been filed in the US, followed by Brazil and Indonesia. A range of legal bases have been used in the growing body of climate litigation, but in specific relation to liability or responsibility, as characterised earlier, three main rationales can be identified. I’d like to discuss each of them briefly, before examining a case-study more closely.

The first rationale relies on a private tort law – or civil liability – framing (slide), which relates to the protection of the interest of the injured party. Whereas this framing is the most basic one, it is complex in terms of causality and attribution.

From a scientific perspective, it requires the establishment of what has been called “end-to-end” attribution of a specific harmful outcome to the specific emissions of a given entity. It must be shown that “but for” the conduct of the defendant, the plaintiff would not have been injured as it was. In such a case, the responsible entity and its contribution to the climate harm have to be identified empirically.

Less demanding theories can allocate liability on the basis of the “**share**” of the **problem** caused. This can be understood as a variation of market share liability, as initially developed by California’s Supreme Court in *Sindell v. Abbott Laboratories* (1980). In such a variation, the impossibility to identify the specific manufacturer whose product is

to blame for the injury is overcome by allocating liability to all manufacturers based on their market share or their share of the contribution to the harm.

Some possible illustrations of cases – all pending – where these theories are at play are *Lliuya v. RWE* (Higher Regional Court in Hamm); *Hugues Falys et al v. Total Energies* (commercial court at Doornik /Tournai, Belgium); *Asmania et al v. Holcim* (Cantonal Court of Zug, Switzerland).

Theories based on proportional contribution to the problem can also be deployed for the **protection of a public interest** (slide). In this public law framing, akin to that of public nuisance, two main theories can be identified.

One is a variation of proportional liability but with a focus on a type of impact. This is sometimes characterised as requiring only “general” rather than “specific” causation. Rather than attributing the effects of a specific event (e.g. the July 2024 European heatwave) to a specific conduct, the focus is on linking the increased frequency and severity of heatwaves (or other types of events) to climate change, and climate change to the defendants’ conduct, through their contribution. Possible examples are provided by some 26 lawsuits by counties, municipalities and cities in the US against fossil fuel majors, some of which rely on public nuisance.

The other possible articulation of the theory is even more general. It links the conduct of the defendant to the broadest form of climate harm, namely **interference with the climate system itself**. Given the scientific and political consensus that anthropogenic emissions of greenhouse gases over time are the cause of climate change, the only aspect that would need to be determined is the extent of an entity’s contribution to climate change as a problem. Possible illustrations could include *Smith v. Fonterra* (pending before New Zealand courts), where a new tort of harm to the climate system was argued alongside the torts of public nuisance and negligence; *Held and others v. Montana*, but only because of how it frames constitutional rights as protecting a stable climate system; and the position of certain States and international organisations in the pending ICJ proceedings on climate change.

The third basis on which responsibility for climate harm could be established concerns **non-linear outcomes or the triggering of tipping points** ([slide](#)). The question here concerns responsibility for adding the straw that breaks the camel's back. Here, the straw is of course the incremental concentrations of greenhouse gases from anthropogenic emissions, and the camel's back is the climate system. A less inelegant way of explaining this non-linear dynamics is the answer given by one of the characters of Hemingway's novel *The Sun also Rises*, when asked how he went bankrupt: "two ways" he replies, "gradually, and then suddenly".

The core issue is who is responsible for the marginal tonne(s) of greenhouse gases that tip the system, whether all emitters, or only large emitters or possibly a single emitter or group thereof? This question is wide open and could be approached in different ways, most likely through a strict liability system or through a public law prism focusing on the risk generated by large emitters. Its complexity lies in the possible disconnect between the merely incremental contribution to the problem and the disproportional damage caused by it. Tipping-point litigation has not materialised yet, at least to my knowledge. But it may not be that far. Of course, if one broadens the scope of possible examples to include forward-looking cases relating to due diligence, there are many, from *Urgenda* to *Milieudefensie* to *Klimaseniorinnen*, before both domestic and international courts.

Liability for climate harm in the ICJ advisory proceedings on climate change

In order to illustrate in some more detail the range of issues raised by establishing responsibility for climate harm, it is useful to make reference to the pending ICJ advisory proceedings on climate change ([slide](#)). Of course, advisory proceedings are mere advice, in this case given to the UN General Assembly, which requested the opinion. And we do not have the opinion of the Court yet. But these proceedings are extremely significant both for the unprecedented level of engagement by over 100 States and international organisations and the wide range of issues pleaded. It is also a good basis for further discussions and exchanges.

I will not address the entire set of issues covered by these proceedings, but **only the specific issue of responsibility for climate harm**. I will do so first in relation to the process of drafting of the UN General Assembly resolution making the request, with the

important caveat that almost every word in that resolution was carefully negotiated. Then I will discuss how the issue featured in the written and oral pleadings.

As a short **prelude** to the discussion of the resolution, let me mention briefly that there have been many views, often highly critical, about the formulation of the questions. I think that constructive criticism was an important part of the process, although what could be gathered from it was minimal, both because of the major political constraints resulting from the negotiation and, also, because no alternative drafting was ever articulated, except for certain details that, often, were politically out of the cards.

The Request puts **two questions** to the Court. The second question was initially the only question, and it focuses on “legal consequences”, which is in the terminology of the ICJ a short-hand for responsibility (slide). The first question was added as a “forward-looking” question, and during the negotiations there were attempts at keeping only the first question, about obligations, and discard the second, about responsibility (slide).

There is naturally much to be said about all this, but in an effort to remain self-contained, let me note that the arguments developed in the voluminous written and oral submissions are **variations between two poles of the spectrum**, one emphasising a forward-looking narrative centred around the UNFCCC and the Paris Agreement as the sole or main instruments and excluding issues of responsibility, and the other stressing, on the contrary, the accountability focus of the second question, which expressly relies on the terminology of the ILC Articles on State Responsibility (slide showing options). These are also some of the outcomes we may see in a few months, when the Court renders its opinion.

A substantial number of submissions, 54 out of 91 (green surface) argued the second question as one of responsibility under the ILC Articles (slide).

The theory – or family of theories – of responsibility articulated in the submissions of States is complex and seems to rest on three main elements:

The first is an emphasis on assessing a conduct, the characterisation of which was woven into the text of the resolution (slide). What is on trial from this perspective is indeed a conduct by certain responsible entities. The latter are, basically, large emitters, rather than producers (although judge Cleveland, from the US, brought back the question of

producers at the end of the hearing) but the focus is not on trying to single out one or more specific States. It is about the legality, as a matter of principle, of the conduct. The conduct is described as both acts and omissions over time, so there is a deliberate retrospective focus. The series of acts and omissions over time, taken together, are presented as a breach arising from a composite act, in the meaning of Article 15 of the ILC Articles, with sufficient knowledge since the 1960s.

The second element is the characterisation of the climate harm at stake, which consists of interference with the climate system as such, specifically “*significant harm to the climate system and other parts of the environment*” (slide). Underpinning this focus is the fact that the causal link between anthropogenic GHG emissions and climate change is “unequivocal” in the terminology of the IPCC, which reflects both a scientific and a political consensus, given the procedure for the adoption of summaries for policy makers. States have naturally also referred to a range of specific impacts, as well as specific injuries, but the broad focus on harm to the climate system was retained in the resolution to unburden the Court from the scientific issues relating to causality.

The third element concerns the articulation of the legal consequences, which go well beyond the relationship between responsible entities and injured parties. The extensions rests both on (i) the *erga omnes* and sometimes peremptory nature of the primary rules at stake, a breach of which triggers secondary obligations for third parties and international organisations, and (ii) the broad conceptualisation of those on the receiving end, including States – whether injured, specially affected or particularly vulnerable – as well as individual and collective human rights subjects, present and future. Yet, as the slide shows, the majority of the written statements submitted focused on forward-looking consequences, higher mitigation ambition, rather than on consequences for past harm.

What will the Court say? There are many aspects of the question, and the Court could provide an answer without saying much about responsibility for climate harm. I have my own guess, which would fall somewhere around here (slide), but it’s really anyone’s guess at this stage.

I would like to recall, however, the observation I made at the beginning of this lecture. The climate for speaking about the climate has changed very significantly in just a few

years and months. Liability for climate harm is likely the most sensitive issue of all in this context.

Whether the Court holds back or goes all in, or anything in between, it's not unreasonable to expect that, precisely because of the tense context, the Court's opinion will have additional gravitas. We shall see soon enough.

Now, let me end with a green slide, for want of a green note, at least for now. Thank you very much for your kind attention.