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*Legal action as a driver and consequence of
climate-related physical risk adaptation*

Liability risk and adaptation finance

April 2021

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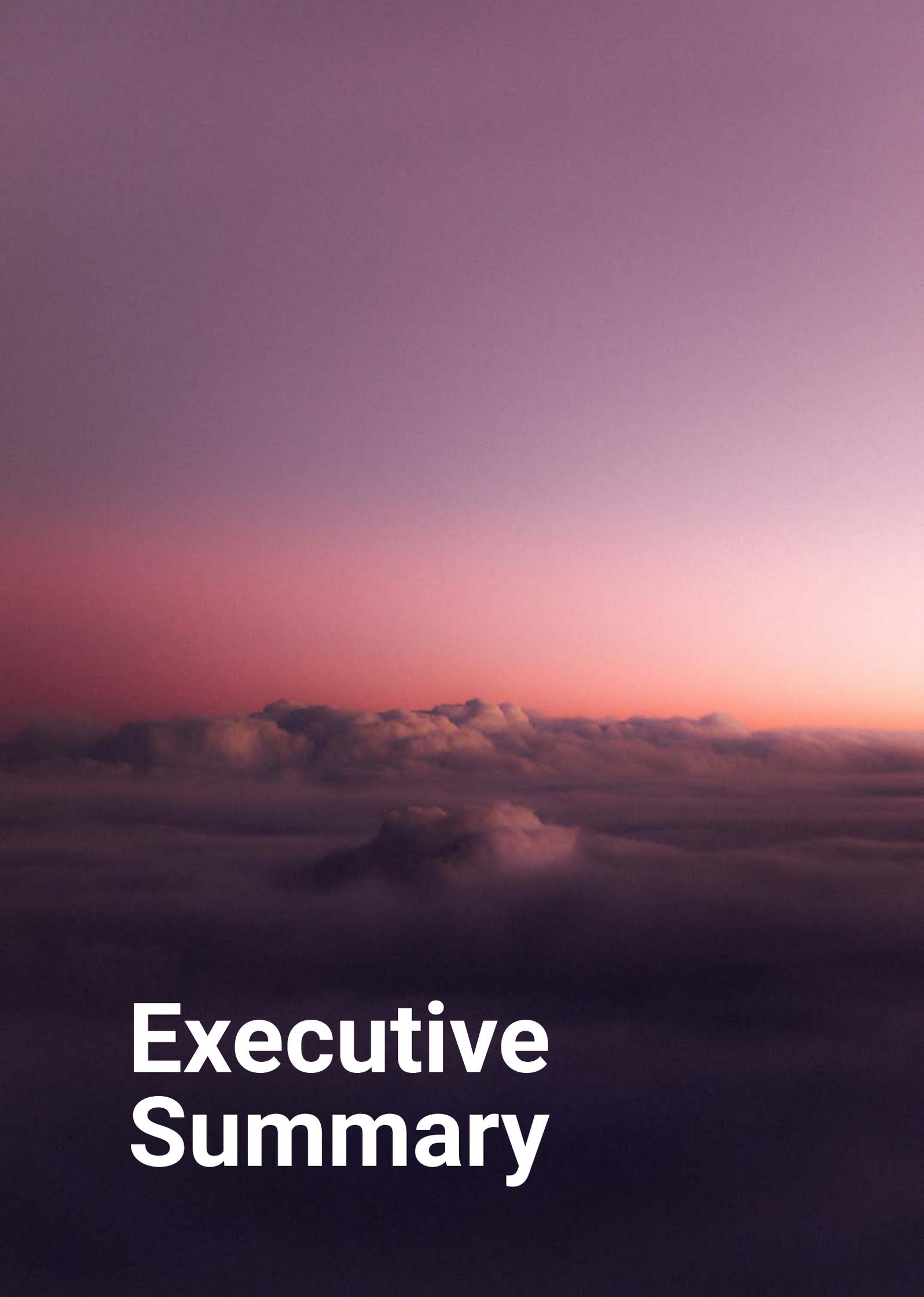
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Any errors or omissions in this briefing paper are the authors' own. The paper reflects the law as at February 2021.

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A full-page background image showing a sunset or sunrise. The sky transitions from a deep purple at the top to a bright orange near the horizon. A thick layer of white and grey clouds is visible, with some light breaking through. The overall mood is serene and atmospheric.

Executive Summary

Purpose and scope of this briefing paper

Key takeaway 1

Climate change litigation and other legal action can act as a driver and consequence of adaptation to the physical risks associated with climate change. However, understanding of the function and magnitude of climate-related litigation remains nascent within the financial services sector. This may lead to a mispricing of physical risks in the real economy, capital and insurance markets, and under-allocation of resources for adaptation finance.

Climate change litigation and other legal action, such as regulatory enforcement proceedings, fines and penalties, have long-been recognised as a source of financial risk. Legal action, or the credible threat thereof, can act as both a driver of adaptation to physical climate-related risks, and as a consequence of maladaptation or a failure to adapt.

In order for a financial institution or prudential supervisor to quantify the potential risk impact – including the credit risk or systemic risk – of climate change litigation and other legal action to a given project, borrower, portfolio, institution or system, they must of course understand the magnitude (likelihood x impact) of that risk in a given context, and its materiality. Institutional capacity to undertake those assessments, in turn, requires a foundational understanding of:

- the nature and scope of climate change liability risks as a driver of adaptation or consequence of a failure to adapt, and how their temporal dynamics – i.e., before or after the physical risks to which they relate – can bring forward time horizons for the materiality of climate-related financial risks;
- the role of litigation and enforcement action as both a risk shifting mechanism and a risk transmission mechanism with secondary and tertiary impacts throughout the financial sector. This includes how litigation may drive or inhibit further action on adaptation, and reduce or raise barriers to adaptation finance; and
- the contexts or scenarios in which various legal avenues are more likely to be pursued, in what sectors and against which market actors.

This briefing paper seeks to contribute to these foundational points of understanding, at an introductory level. In so doing, it reveals the potential for litigation to lower a number of barriers to adaptation finance. It also provides a foundation from which institutions can develop methodologies to analyse liability risk within climate change risk scenario analyses and pricing models. This paper covers direct liability risks for actors in the real economy and corporate financial institutions, as well as the secondary and tertiary impacts that arise when these liability risks flow through the financial system to actors such as banks and insurers.

This briefing paper builds on a UNEP FI work programme of research into adaptation and adaptation finance, so it focuses on the relationship between physical and liability risks, and the potential impact of such legal action on adaptation finance.

Similar interlinkages between transition and liability risks exist and warrant further exploration. It is important to note that this paper is limited in its consideration of liability risks arising from failures to manage **physical** risks associated with climate change, and their role as a driver or consequence of adaptation to those risks. It is acknowledged that adaptation **finance** is a response forming part of the **transition** to a net zero emissions economy. The feedback loops between physical, transition and liability risks and adaptation finance merit further exploration, but are not otherwise analysed in this briefing paper.

Framework overview

Key takeaway 2

This briefing paper provides a foundational framework within which institutions can conceptualise the role of legal action as a driver or consequence of adaptation, and as a mechanism to reduce barriers to the availability of adaptation finance. It provides a key input for the future development of more holistic climate risk and pricing models.

This briefing paper provides a framework by which institutions can consider the range of climate-related liability risks to a borrower, book, portfolio or system – both before (ex ante) and after (ex post) the relevant physical risk, as summarised in **Figure 1**. Discussion of the nature of liability risks associated with physical climate impacts, and their relationship to adaptation and adaptation finance, is set out in **Part 1**. Discussion of the kinds of claims and enforcement action that may arise under each category of this framework, and preliminary observations on the contexts or scenarios in which each avenue is more likely to be pursued, is set out in **Part 2**.

Taxonomy of adaptation-related legal action

Ex ante physical impact

- 1  Ex ante legal action for a **failure to manage or disclose physical risks** (*consequence of a failure to adapt, driver of adaptation*)

- 2  Ex ante legal action against **greenhouse gas emitters** as a consequence of the need to adapt by third parties (*a consequence of adaptation*)

- 3  Ex ante legal action against **governments or regulators for inadequate consideration** of physical risks (*driver of adaptation*)

- 4  Ex ante legal action against **governments or regulators 'anti-regulatory' claims over elevated adaptation requirements** (*consequence of adaptation*)

- 5  Ex ante legal action for **misrepresentation of physical risk exposures or adequacy of adaptation activities** (*consequence of a failure to adapt, driver of adaptation*)

- 6  Ex ante legal action for a **failure to comply with adaptation regulation or non-adaptation regulation that is triggered by climate impacts** (*consequence of failure to adapt, driver of adaptation*)

Ex post physical impact

- 7  Ex post legal action for a **failure to manage or disclose physical risks** (*consequence of a failure to adapt*)

- 8  Ex post **insurance claims for a failure to manage physical climate risks** (*consequence of failure to adapt*)

- 9  Ex post **direct legal action against financiers and guarantors** in relation to physical damage occasioned by borrowers (*consequence of failure to adapt*)

- 10  Ex post legal action for **negligent financial or professional services** which causes physical risk exposure (*consequence of failure to adapt*)

- 11  Ex post **contractual disputes** relating to climate damage, e.g., force majeure (*consequence of adaptation or a failure to adapt*)

- 12  Ex post legal action against **governments or regulators for inadequate consideration of physical climate risks or negligence or nuisance** (*consequence of failure to adapt*)

- 13  Ex post legal action for **breach of adaptation-centred regulation or non-adaptation regulation that is triggered by climate impacts** (*consequence of failure to adapt*)

Figure 1: Framework of adaptation-related legal action

Issues for consideration by financial institutions

Key takeaway 3

Liability risks can alter the breadth, and temporal materiality, of associated physical risks for any given borrower, book, portfolio or system.

Climate change litigation and other legal action can extend both the breadth, and temporal relevance, of the risks and harms associated with the materialisation of the physical risk to which it relates. Legal action, or the credible threat thereof, can act as both a driver of adaptation to the physical risks associated with climate change and as a consequence of maladaptation or a failure to adapt. Legal action can arise before the materialisation of the physical risk to which it relates, or before the compulsion to implement adaptation measures by regulations, and thus can bring forward the time horizon in which such risks are material. Legal action can also occur after the crystallisation of a physical risk into an event or impact, acting to allocate harms caused by the failure to adapt, as a catalyst of demand for further adaptation action, and as a mechanism to uncover efficient pricing of adaptation finance.

Key takeaway 4

Liability risks can act as a mechanism to transmit climate-related risks and direct costs from individual market actors, with secondary impacts at portfolio (sectoral) levels and, potentially, tertiary impacts on financial systems.

Financial institutions face direct impacts from legal action as defendants in litigation or the target of regulatory investigations or enforcement proceedings, just like other corporates in the real economy. They also face indirect second order impacts of legal action involving defendants in the real economy, through credit, investment and underwriting risks. Finally, financial institutions face third order indirect impacts through systemic risks if liability risks relating to adaptation claims arise at a sufficient magnitude across sectors or geographies.

Key takeaway 5

Legal action can reduce barriers to the deployment of adaptation finance at the necessary scale.

One of the key barriers to the deployment of adaptation finance at the necessary scale is that it is not currently efficiently priced. As a driver of adaptation or consequence of a failure to adapt or maladaptation, climate change litigation and other legal action can be an influential factor in the supply of, demand for and efficient pricing in relation to adaptation finance. Climate change litigation and other legal action can act to reduce a number of the main barriers to the necessary scaling of adaptation finance identified by the Global Commission on Adaptation (GCA) and UNEP FI, including inadequate incentives for private finance, weak conventions in the financial industry and operational gaps at institutional levels. Liability risks can bring forward the time horizon for physical risks through legal action before the physical risk materialises, which, if correctly priced, can create the conditions for adaptation finance to flow to activities to avoid the physical risk.

Liability risks can also increase incentives to act by shifting losses to the entity that directly controls the level of risk. Most directly, this occurs in litigation relating to a failure to manage or disclose the specific physical risk. Indirectly, this can be through incentives to act on emission reductions if firms controlling the level of risk by emitting are liable for consequences of climate change and required to provide adaptation finance or compensation for losses (i.e., emissions are liabilities). Looking ahead, it could be that liability risks shift incentives to provide adaptation finance so that emitters or others such as insurers are not held liable for climate change impacts that would otherwise materialise (i.e., inadequate adaptation finance is a liability).

Liability risks can encourage better physical climate risk-related financial disclosures, such as those in line with the recommendations of the Task Force on Climate-related Financial Disclosures (**TCFD**), helping to drive adaptation finance through better pricing of the future risks of climate change.

Ultimately, we may eventually see changes to capital adequacy requirements to reflect liability risks (as well as physical and transition risks) as a means of influencing price and availability of financial capital.

Materiality, limitations and priorities for next steps

Key takeaway 6

The magnitude of climate liability risk will vary significantly across borrowers, books, portfolios, institutions and financial systems. Robust risk assessment and development of pricing models remain a complex future task, requiring collaboration between lawyers, sustainability and risk professionals. A work program to develop a framework of threshold risk materiality indicators is suggested as a priority next step.

The nature and magnitude of exposures – by borrower, insured, portfolio and system – will be unique to each institution. Whilst this briefing paper provides a foundational assessment analysis of the relevance of climate change litigation as a driver or consequence of adaptation and adaptation finance, the complex task lies ahead for financial institutions and their supervisors to quantify the potential risks associated with climate change litigation with such degree of particularity that can be meaningfully applied into strategy, product development and credit pricing.

Until meaningful tools are developed, it may be prudent to start with a high-level sectoral assessment of climate-related physical risks and litigation exposures across a bank's loan book in order to prioritise the detailed assessment, with collaboration between credit risk managers, sustainability professionals and lawyers. For some books the risk may be relatively easy to determine. For example, it will be far simpler to assess the litigation exposures associated with a commercial agriculture book containing a small number of very large loans with proceeds dedicated to a limited range of crops across limited jurisdictions, compared to a book of revolving credit facilities issued to SMEs across a myriad of sectors in diverse jurisdictions. Whilst such proxies are far from perfect, a failure to integrate litigation as a factor in climate risk modelling and stress-testing may result in the systematic under-pricing of associated risks.

The science is changing, potential claimants' appetite for litigation is changing, the courts' appetite for hearing disputes involving climate issues are changing, and the underlying legislative and regulatory frameworks are changing. It is very challenging to quantify with any kind of rigour this rapidly evolving area. Although a forward-looking assessment of the materiality of specific claims or categories of claims is difficult, the likelihood of legal action relating to physical risks and adaptation as a whole increases or decreases in various plausible future climate scenarios, to a large extent depending on the success and pace of the transition, and therefore the magnitude of the underlying physical risks.

We offer some preliminary observations on qualitative factors that may be used as triggers for a robust materiality assessment. These include:

- financing of high-value critical municipal infrastructure;

- finance for the fossil fuel industry (including, in particular, for greenfields projects and/or borrowers without credible transition strategies);
- projects operating in jurisdictions where courts are more receptive to rights-based claims, have broad tests for standing, or general duties of care or duties not to cause harm;
- finance to entities incorporated in jurisdictions where there is a significant volume of climate-related litigation;
- project finance or public-private partnership (PPP) finance structures involving complex and long term contractual arrangements and all else being equal, where the related-physical risk is assessed as material.

The issues covered in this paper are necessarily limited by its scope as a high-level introduction to the nature of legal action and liability risk exposures relating to adaptation activities and finance. We suggest that next steps should include further consideration of framework indicators by which institutions can assess the circumstances in which liability risks may exceed materiality thresholds. Such a program of work would include a more granular assessment of the contexts or scenarios in which various legal avenues are more likely to be pursued, in what sectors and against which market actors, and in which jurisdictions.

Contents

Part 1: Foundational concepts on climate-related liability risks	13
1.1 Purpose and context of this briefing paper	14
1.2 What is the role of legal action in adaptation?	15
1.3 Impacts on financial institutions and systems – primary, secondary and tertiary	20
1.4 Legal action can be an enabler of adaptation finance	21
1.5 Framework of climate-related adaptation legal action	22
1.6 Triggers for materiality assessments	26
1.7 Limitations and priorities for next steps	27
Part 2: Potential liability exposures – categories	28
2.1 Legal action before the physical impact	29
2.1.1 Category 1: Ex ante legal action for a failure to manage or disclose physical risks	29
2.1.2 Category 2: Ex ante legal action against carbon majors for the costs of adaptation	31
2.1.3 Category 3: Ex ante legal action against governments or regulators for inadequate consideration of physical risks	33
2.1.4 Category 4: Ex ante legal action against governments or regulators for inappropriate consideration of climate change	35
2.1.5 Category 5: Ex ante legal action for misrepresentation of adaptation activities or preparedness	36
2.1.6 Category 6: Ex ante legal action for a failure to comply with adaptation regulation or non-adaptation regulation that is triggered by climate impacts	38
2.2 Legal action after the physical impact	40
2.2.1 Category 7: Ex post legal action for a failure to manage or disclose physical risks as a consequence of a failure to adapt	40
2.2.2 Category 8: Ex post legal action against insureds for a failure to manage physical climate risks	41
2.2.3 Category 9: Ex post direct legal action against financiers and guarantors in relation to physical damage occasioned by borrowers as a consequence of a failure to adapt	43
2.2.4 Category 10: Ex post legal action for negligent financial or professional services as a consequence of a failure to adapt	45
2.2.5 Category 11: Ex post contractual disputes relating to climate damage as a consequence of a failure to adapt or maladaptation	46
2.2.6 Category 12: Ex post legal action against governments or regulators for inadequate consideration of physical climate risks or negligence or nuisance	48
2.2.7 Category 13: Ex post legal action for breach of adaptation-centred regulation or non-adaptation regulation that is triggered by climate impacts	49
Part 3: Key takeaways and conclusions	52



Part 1:
**Foundational
concepts on
climate-related
liability risks**

1.1 Purpose and context of this briefing paper

This briefing paper adds to the emerging literature on climate change litigation by exploring the interplay between liability risks and physical risks and how legal action relating to adaptation may act as a driver or consequence of adaptation. It builds on recent reports by the GCA¹ and UNEP FI² on adaptation and adaptation financing,³ by exploring the role of climate change litigation in adaptation finance and the implications for financial institutions. It also acts as a complement to a recent report by the UNEP Principles for Sustainable Insurance Initiative⁴ on the assessment of litigation risks for the insurance sector – although acknowledging that the relevance, and efficient pricing of such risks are markedly distinct in credit risk analysis versus that of insurers in pricing their financial lines.

This briefing paper covers adaptation to the physical impacts of a changing climate⁵ and adaptation finance, not the process of adapting to economic transition risks as economies decarbonise, nor the related transition finance. The assessment of climate change litigation in this briefing paper is both broader than the methodology offered in the UNEP PSI report, as this briefing paper considers legal action and liability risks to actors beyond insurers and their insureds – from those in the real economy, to financial services actors, to financial systems. And it is narrower, as it considers legal action relating to physical risks and adaptation only, which to date have received less attention than climate change litigation related to the economic transition to a net zero emissions economy consistent with the achievement of Paris Agreement targets.

The briefing paper offers a general framework for consideration of the legal grounds by which the law and relevant enforcement pathways are likely to arise in relation to physical risks, the costs when they materialise and market actors' preparedness with adaptation measures or a failure to adapt. This briefing paper uses the term 'legal action' rather than litigation, to capture the broader range of proceedings beyond courtroom litigation, including complaints to quasi-judicial bodies and public regulatory enforcement.⁶ This legal action can be either a driver or consequence of adaptation or maladaptation, and the potential role for such claims or the risk of such claims in

1 Global Commission on Adaptation, *Adapt Now: a Global Call for Leadership on Climate Resilience* (September 2019)

2 United Nations Environment Programme Finance Initiative, *Driving Finance Today for the Climate Resilient Society of Tomorrow* for the Global Commission on Adaptation (July 2019).

3 This briefing paper uses the term 'adaptation finance' to refer to public, private or blended finance for activities that focus on improving preparation and reducing climate-related risk and damage for both human and natural systems. See n 14.

4 United Nations Environment Programme Principles for Sustainable Insurance Initiative, *Insuring the Climate Transition: Enhancing the insurance industry's assessment of climate change futures* (January 2021).

5 This is defined by the IPCC as the process of adjustment to actual or expected climate conditions and their effects on human and natural systems to avoid or limit harmful consequences and/or realize benefits: *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. IPCC, 2014 The IPCC definition is adopted in UNEP FI report at n 2. Physical impacts means the materialisation of the acute and chronic changes to the climate generally, rather than the effect of these, for example the damage to buildings from an extreme weather event or subsequent increased insurance cost.

6 The term 'legal action' covers the spectrum of private dispute resolution and public enforcement action, including private litigation and arbitration, judicial review proceedings, complaints to judicial or quasi-judicial bodies, and public enforcement action, such as regulatory investigations, enforcement proceedings, fines and penalties.

dismantling or raising barriers to the availability of adaptation finance. Consistent with the continually evolving nature of climate change litigation, this briefing paper takes a forward-facing view of potential liability exposures which can be incorporated into scenario analysis or stress testing. For many financial institutions, backward-looking risk of legal action tends to be incorporated in due diligence and reputational risk assessments of clients. But assessment of forward-looking liability risks is nascent and will require the development of data, methodology and tools. This briefing paper provides the next step in the development of this area, but much more work will need to be done to develop a 'plug and play' risk management tool for forward-looking liability risks relating to the physical impacts of climate change.

This briefing paper seeks to add three things to the existing tools and literature on climate change litigation and liability risks. First, it aims to help with risk assessment and scenario analysis undertaken by financial institutions, regulators or operating firms, by offering a framework of factual scenarios to assess the likelihood that physical risk or adaptation-related litigation will be brought (that is, informing step 1 of the UNEP PSI litigation risk assessment).⁷ Second, it helps to understand the relationship between liability risks and physical risks, ex ante (before) and ex post (after) the materialisation of a physical risk, which in turn can feed into risk assessment. Third, it offers some observations on how legal action related to physical risks relates to the real world impacts of climate change and our preparedness for it, where legal action can be a driver of adaptation activities, or a consequence of adaptation, a failure to adapt or maladaptation.

The main audiences for this briefing paper include financial institutions, particularly banks, asset owners, asset managers and insurance companies, and the financial supervisors that regulate them. This briefing paper offers high-level observations that provide the necessary foundation for further studies on the likelihood of adaptation-related litigation or other forms of enforcement action in various sectors of the real economy and capital markets, as well as for individual actors.

1.2 What is the role of legal action in adaptation?

Legal action may be brought in order to drive climate adaptation action or finance, or as a consequence of adaptation, maladaptation, or a failure to adapt. This briefing paper offers a general framework by which to consider fact patterns that may catalyse liability risks related to physical climate risks. Legal action, and liability risks in anticipation of or on crystallisation of these risks, can drive climate adaptation in the real economy. Legal action can drive financial flows towards adaptation activities as real economy actors and financial institutions mitigate the direct and indirect liability risks they face. Legal action and liability risks can also occur as a consequence of adaptation, maladaptation or a failure to adapt as claimants reach to the courts to seek compensation for loss or damage from the impacts of a changing climate or our efforts to protect ourselves from it. It is important to note that claims can be both 'pro' adaptation (seeking to catalyse adaptation measures), or 'anti' adaptation (seeking to maintain the status quo).

Legal action can also have negative impacts on adaptation finance. For example, on flood plains subject to sea level rise, if financiers and developers face increased litigation

⁷ UNEP PSI, above n 4, p81-83.

because the cost of adaptation infrastructure is sizeable, they might withdraw from the relevant markets rather than undertake the adaptive measure.

Understanding the nature and range of legal action to date, as explored in the case examples throughout Part 2, highlights areas of inquiry that can improve or deepen due diligence and disclosures in connection with physical risks and adaptation measures. Yet, this is a new and fast-evolving area. Past litigation claims and outcomes will not be representative of future risk. In particular, while causation has proven a challenge for plaintiffs to date, this barrier is higher for claims associated with a failure to mitigate (i.e., a failure to reduce emissions) rather than to adapt to physical risks and, in any event, receding due to recent scientific advances. Certain types of lawsuits need to demonstrate a link between defendants' emissions and plaintiffs' losses (e.g., adaptation needs) if courts are to grant requested remedies. General causation (that the defendant's emissions in part caused climate change) is usually accepted by the courts, yet plaintiffs have had difficulties in establishing specific causation (that the defendant's emissions caused the plaintiff's loss on materialisation of the physical climate risk) due to the temporal and spatial disconnect between an entity's emissions, their accumulation in the atmosphere and the manifestation of climate change impacts. But this is changing.⁸

Recent advances in attribution science, which calculates the influence of climate change on the weather, provide new evidential tools to assess legal concepts of causation and responsibility.⁹ This is discussed in more detail in the case study of *Lliuya v RWE* on page 32. These advances increase the likelihood of success of claims for climate damages to pay for adaptation measures, which is one of the adaptation-related legal action featured in the taxonomy we set out in this briefing paper. More specifically, with the recognition of the *financial* impacts associated with the physical risks and maladaptation to climate change, there has been a significant broadening of the action or inaction that may catalyse harm or breach of a relevant law or duty. For example, more recent climate-related claims have sought to impose liability for a failure to adequately *manage* the foreseeable physical risks to the defendant's controlled assets associated with climate change – an issue distinct from the question of the entity(s) responsible for the emissions that caused the physical risks in the first instance. Such actions contemplate far more direct causal links between the harm/loss (e.g., to a neighbour's property) for the alleged action or inaction (e.g., the defendant's failure to adapt and upgrade their infrastructure to the foreseeable physical risks associated with climate change), than a claim based on causation of the changes to the climatic system themselves (a failure to mitigate). Compared with linking carbon majors to damages, there could be much less uncertainty when it comes to, for instance: (a) determining the risk to third parties from a given rainfall event; (b) how a changing climate has and is projected to change that risk; (c) when this risk would have been reasonably foreseeable; and (d) what a defensible capital and operational plan would look like to adequately mitigate that risk.

8 Stuart-Smith, R. F., Otto, F. E. L., Saad, A., Lisi, G., Minnerop, P., Lauta, K. C., et al. (in prep.). Filling the evidentiary gap in climate litigation.

9 See, e.g., American Meteorological Society, Explaining Extreme Events of 2019 from a Climate Perspective; Special Supplement to the Bulletin of the American Meteorological Society, Vol 102, No. 1, January 2021.

Adaptation-related legal action may be before (ex ante) or after (ex post) the materialisation of physical risk, each of which have different consequences for climate risk management by financial institutions. Ex ante legal action can draw banks' and insurers' attention to prevention of the physical risk through their relationships with customers before the moment of harm occurs. While there is a long tail for many physical climate risks, legal action can bring forward time horizons where the liability risk relating to a physical risk becomes material before the physical risk itself, as shown in **Figure 2**. By contrast, ex post legal action occurs once the physical climate impact has materialised. Risk management in this context may involve banks or insurers minimising their exposure to litigation or the financial consequences of liability risks, such as divesting financial assets or removing policy cover. This is particularly so for liability risks related to a failure to adapt. Banks or insurers may require that adaptation measures are implemented (at the threat of divestiture or litigation) or raise premia to account for the relevant physical and liability risks.

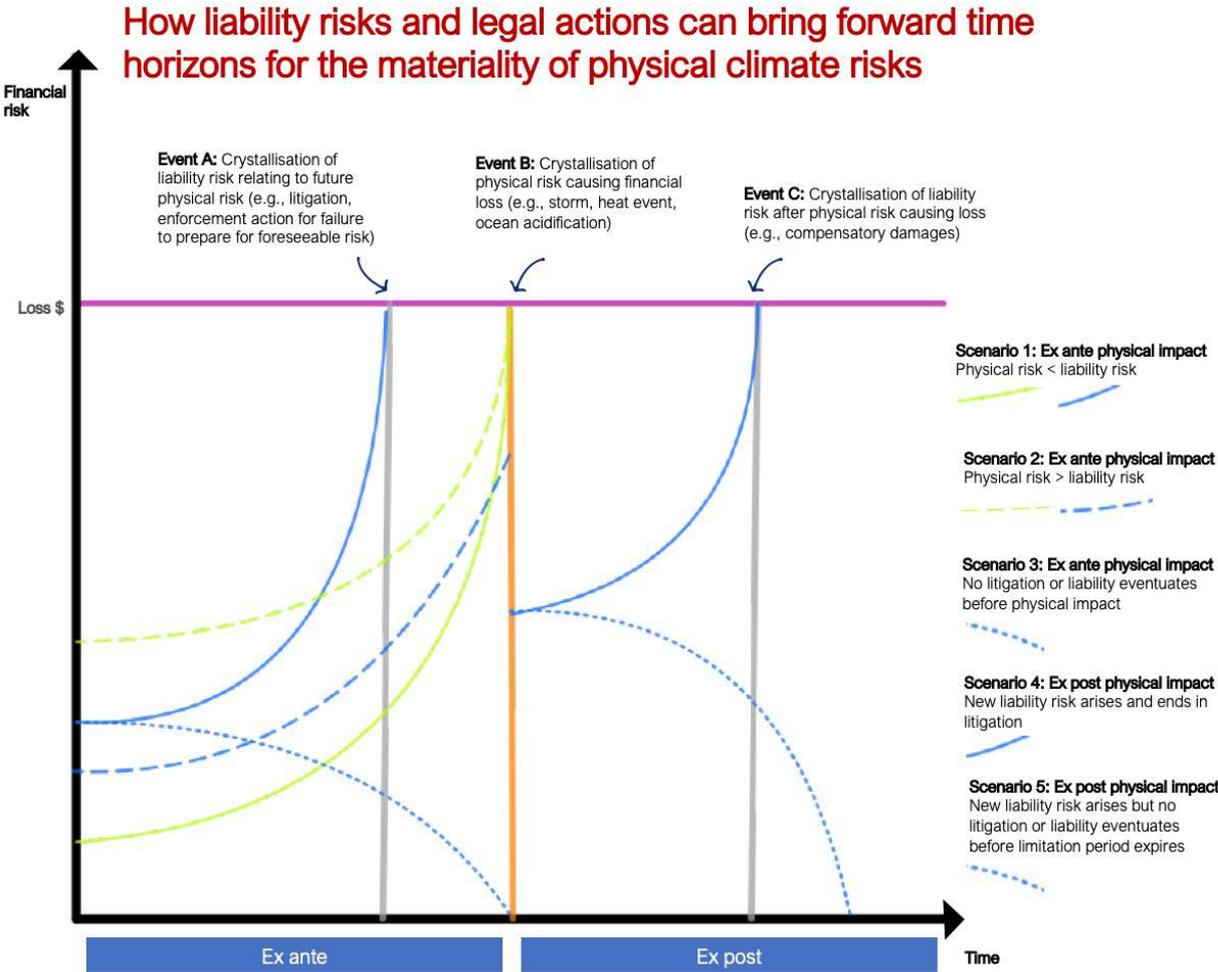


Figure 2: Time horizons of physical and liability risks. This diagram represents a simplified version of hazards as point-in-time shocks (e.g., extreme weather events) rather than gradual onset stresses (e.g., ocean acidification) and exposures as all-or-nothing crystallisation normalised to 1, rather than partial or increasing quantifiable losses.

These risk management actions may reduce financial entity-specific harm and potentially minimise a risk pathway for financial contagion, but are unlikely to directly lead to better mitigation or reduction of the physical risks or their consequences from a societal perspective.

Understanding the interplay of physical and liability risks could lead to financial institutions adopting a wider approach to climate risk management and, in so doing, sending a market signal to their customers and counterparties. Assessing potential claimants can sharpen the focus on potential impacts of physical risks and the materiality of these risks. A fuller appreciation of liability risks encourages a greater focus on mitigating physical climate risks to these potentially affected stakeholders.

While some jurisdictions are more litigious than others, the effects of legal action related to adaptation can cross jurisdictional boundaries. For example, a bank can be sued in its home jurisdiction or suffer financial loss following litigation relating to an asset or borrower liability exposure in another jurisdiction. Of the over 1,700 climate cases brought to date, more than three-quarters have been brought in the United States, with a significant number of cases brought in Australia (6%), the United Kingdom (4%) and the European Union (3.5%).¹⁰ It is outside the scope of this briefing paper to undertake a detailed analysis of these cases (e.g., the proportion of these which relate to physical risk, whether they are *ex ante* or *ex post* and how the legal framework in a particular jurisdiction influences this balance) but two points are noteworthy. First, not all of these cases are 'pro'-climate action, and include, for example, cases challenging wind farms (anti-mitigation) or municipal authorities' planning decisions for coastal retreat (anti-adaptation). Second, many US compensation-type lawsuits focus on adaptation, such as the line of claims by cities and counties seeking contributions to *future* adaptation costs, rather than simply seeking compensation for already experienced losses. That the overwhelming number of cases are in the United States could reflect that it is generally more litigious than Europe and most emerging markets, that it allows for high awards of compensation and a wide spread of contingency fee arrangements, or that it has no costs awards against losing parties.¹¹ Alternatively, or in addition, climate-specific factors may be relevant, such as the fact that many of the highest-emitting firms are based in the US, so options for bringing claims against them outside the US may be limited, particularly for those cases seeking compensation for loss. Or it could reflect the lack of effective government action to date, as citizens seek to hold the government accountable and drive climate action.¹² While there have been fewer cases to date brought in the Global South, it has been suggested that many cases that have a climate change lens are brought without reference to climate change, focusing instead on climate-adjacent issues such as land use, deforestation or human rights.¹³

10 Joana Setzer and Rebecca Byrne, *Global Trends in Climate Litigation: 2020 Snapshot* (July 2020); Maryam Golnaraghi, Joana Setzer, Nigel Brooke, Wynne Lawrence and Lucia Williams, *The Geneva Association. Climate Change Litigation – Insights into the evolving global landscape* (April 2021).

11 See, e.g., J. Mark Ramseyer and Eric B. Rasmusen, 'Are Americans More Litigious? Some Quantitative Evidence' in F.H. Buckley (ed), *The American Illness: Essays on the Rule of Law* (Yale Scholarship, 2013).

12 Setzer and Byrne, above n 4.

13 See for example Joana Setzer and Rebecca Byrne, *Global Trends in Climate Litigation: 2020 Snapshot* (July 2020) 14.

One physical risk or set of impacts after the materialisation of that physical risk can give rise to multiple legal actions within and across different jurisdictions. The nature of the legal consequences of the event or physical risk differ across jurisdictions. The availability of a range of legal actions can drive adaptation or occur as a consequence of adaptation or a failure to adapt. Legal action can include civil or criminal claims or litigation, through to regulatory investigations and actual or threatened enforcement proceedings by a regulator. Accordingly, legal action can act as a mechanism to transfer the consequences of a failure to adapt in the Global South to market participants, and their financiers and insurers, in the Global North. In a recent cross-jurisdictional example relating to physical harms (albeit not directly attributed to climate change), the Supreme Court of the United Kingdom has allowed a case filed by 42,500 Nigerian farmers against the Shell Petroleum Development Company of Nigeria and its UK-listed parent to proceed in a UK court. The claim seeks cleanup costs and compensation relating to pollution emanating from the Nigerian entity's operations in the Niger Delta.¹⁴ This case followed shortly after a decision of an appeals court in the Netherlands ordering Shell's Dutch-listed holding company to pay unspecified damages to local farmers following multiple oil pipeline leaks in the Niger Delta.¹⁵ Momentum seems to be building behind similar transnational liability cases relating to environmental harms.¹⁶

The impacts from chronic changes to the climate can crystallise into considerable liabilities. While the language of *ex ante* and *ex post* the materialisation of a physical climate impact leads itself to thinking about acute impacts such as heat events, wild-fires or drought, the analysis in this briefing paper also applies to chronic changes. Sea level rise, glacial melt, ocean acidification, increased salinity and myriad other chronic changes can give rise to legal action and associated liability risks. The impacts of slow-onset hazards are often not covered by standard insurance policies, so inaction could be more corrosive in the long term.

Legal action relating to climate adaptation occurs in both common law and civil law regimes, and differences between the two systems may lead to different types of claims and avenues of enforcement. In common law systems, judicial decisions are binding and form a body of judge-made law that must be followed by lower courts. This body of law can be supplemented or replaced by codified laws or rights or entitlements enshrined in a written constitution, but need not be. By contrast, in civil jurisdictions there is little scope for judge-made law, although in practice judges often follow previous decisions with similar facts. Civil law systems are codified in written laws enshrining rights and duties. These differences can shape the nature of legal action related to adaptation. For example, claims in civil law countries can be framed around general rights or principles, such as a constitutional right to health or the environment, or a general duty of care or duty not to cause harm. Claimants in common law countries often frame their claims within the more detailed legal requirements of particular causes of action, such as negligence or securities fraud statutes.

14 Okpabi v Royal Dutch Shell Plc [2021] UKSC 3 (12 February 2021).

15 Oguru v Shell Plc [2021] ECLI: NL: GHDHA: 2021: 132 (29 January 2021).

16 Varvastian, S., & Kalunga, F. (2020). Transnational Corporate Liability for Environmental Damage and Climate Change: Reassessing Access to Justice after Vedanta v. Lungowe. *Transnational Environmental Law*, 9(2), 323-345. doi:10.1017/S2047102520000138.

1.3 Impacts on financial institutions and systems – primary, secondary and tertiary

There are three avenues by which legal action relating to adaptation may impact on the financial sector, as shown in Figure 3 below. First, financial institutions face direct impacts from legal action as defendants in litigation or the target of regulatory investigations or enforcement proceedings, just like other corporates in the real economy. Financial institutions may be exposed to liability risks through its own contracts, e.g., where foreseeable climate impacts may impede its ability to meet its contractual obligations.

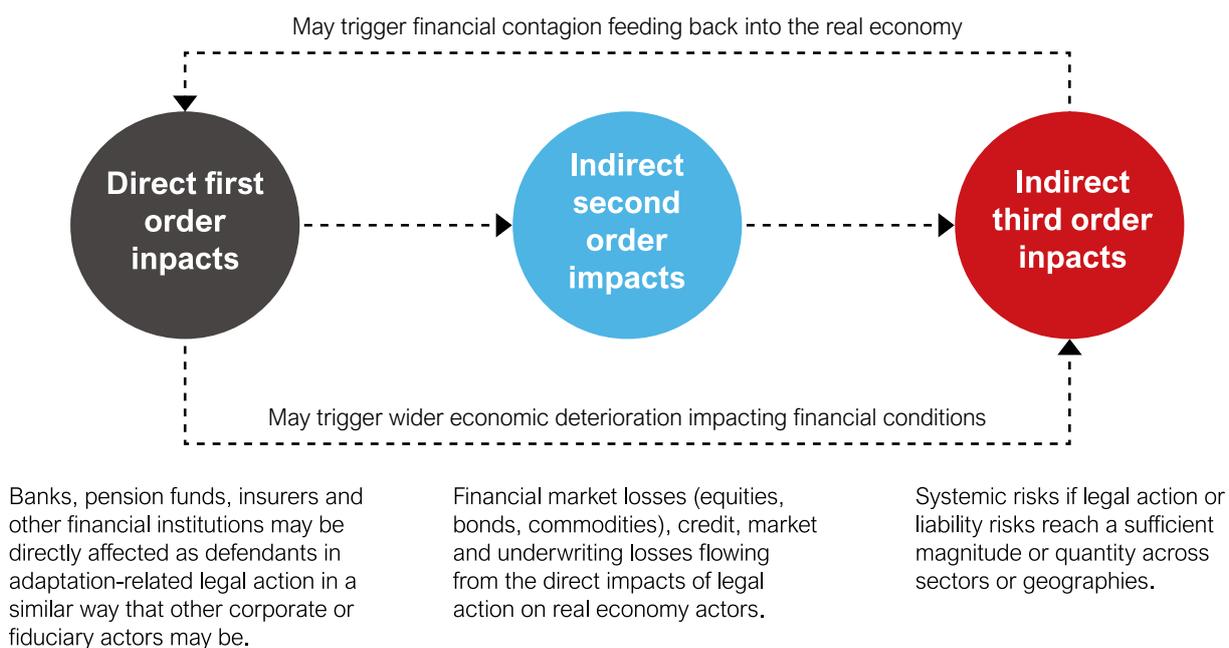


Figure 3: Transmission of liability risks through the financial sector

Second, they face indirect second order impacts of legal action involving defendants in the real economy, through credit, investment and underwriting risks. For example, where a carbon major is sued for costs of adaptation, insurers face second order liability risks for coverage of settlement or compensation orders, while banks face second order liability risks for stranded assets and credit risks if the carbon major customer is unable to service its facilities. Financial institutions may also be exposed to second order liability risks through a counterparty’s transactions through liability exposure of assets. Financial institutions may also be exposed to liability risks due to legal action that places constraints on a counterparty’s ability to achieve their strategic objectives.

These second order impacts can have broader sectoral, portfolio-level and institutional consequences if the claim against one borrower catalyses a revaluation of similar credit risks and underlying asset values (or claims risks under financial lines of insurance) associated with like borrowers or insureds.

Finally, financial institutions face third order indirect impacts through systemic risks if liability risks relating to adaptation claims arise at a sufficient magnitude across sectors or geographies. For example, where municipal governments that are sued by citizens or companies for failing to prepare for climate impacts or causing harm from their prepara-

rations and the claims affect their credit ratings, financial institutions face third order impacts if there is a rapid repricing of municipal bonds, particularly in concentrated banking sectors such as small jurisdictions. It could also lead to consequential changes to capital adequacy requirements for systemically important institutions. Arguably, actual or threatened legal action in respect of new and existing law can act as the juridical scaffolding of and for a climate resilient economy, reducing third order (systemic) risk.

1.4 Legal action can be an enabler of adaptation finance

There is potential for legal action to help overcome some of the barriers to scaling finance for adaptation. This briefing paper uses the term ‘adaptation finance’ to refer to public, private or blended finance for activities that focus on improving preparation and reducing climate-related risk and damage for both human and natural systems.¹⁷

The GCA and UNEP FI identify the main barriers to adaptation financing are as follows:

- **inadequate incentives to act**, including (i) insufficient public financial support; (ii) insufficient incentives for private finance; and (iii) moral hazard where the entity that controls the level of risk is not the one who suffers the consequences, such as insured physical risk or where the impacts are largely externalised on third parties;
- **weak policies and conventions in the financial industry**, including (iv) weak legal and regulatory frameworks and guidance; (v) lack of meaningful disclosure of physical risk; and (vi) absence of harmonised and robust metrics and standards;
- **market barriers**, including (vii) a perceived lack of profitable investments; and (viii) a perceived lack of commercial readiness of adaptation and resilience solutions;
- **operational gaps at institutional levels**, with (ix) weak management of physical risk; and (x) insufficient availability and adoption of physical risk data and tools; and
- **low technological capacity for physical risk management**, including low capacity within (xi) financial system governing bodies; and (xii) financial actors.¹⁸

Liability risks and legal action, as a general proposition, can affect these barriers to adaptation finance. It can incentivise private sector finance (ii). Adaptation finance requires patient capital in the medium to long-term that provides a return on investment by responding to the physical risks of climate change, while not being averse to financial risk generally. Liability risks can bring forward the time horizon for such physical risks through ex ante legal action, which, if correctly priced, can create the conditions for investment to avoid this risk. It can create opportunities for public-private co-financing and incentivising private actors to participate in these can help crowd-in the necessary adaptation finance to reduce aggregate risk to communities. It can also increase incentives to act by shifting losses to the entity that directly controls the level of risk, affecting (iii) moral hazard. It can encourage better physical climate risk-related financial disclosures, such as those in line with the recom-

17 See Barbara Buchner et al, Climate Policy Initiative, Global Landscape of Climate Finance 2019 (November 2019) p18. However, whether an investment has these adaptation and resilience outcomes depends on specific vulnerabilities of the location: MDB Climate Finance Tracking Working Group and the International Development Finance Club Climate Finance Working Group, Lessons learned from three years of implementing the MDB-IDFC Common Principles for climate change adaptation finance tracking (2018) p6.

18 UNEP FI, above n2.

mendations of the TCFD, affecting (v) lack of meaningful disclosure of physical risk and the (ix) management of physical risks on which those disclosures are based, in turn helping to drive adaptation finance through better pricing of the future risks of climate change.

This briefing paper aims to help to address, in part, the operational gaps at institutional levels by giving financial institutions and their supervisors tools to understand liability risks for adaptation-related legal action. Understanding the role of climate change litigation and legal action as a catalyst of adaptation outcomes will contribute to the efficient pricing of the future risks of climate change, integration of climate-related risk issues into financial decision-making to assist in driving adaptation financing. Conversely, if barriers to adaptation and adaptation financing are not removed, litigation may play a more prominent role as a driver of adaptation outcomes, albeit in a manner that is ad hoc, inefficient and expensive.

1.5 Framework of climate-related adaptation legal action

This briefing paper sets out a framework, or taxonomy, of climate-related adaptation legal action, summarised in Figure 1 above. To facilitate useful insights across common and civil law regimes, and across portfolios and sectors, the framework's 13 categories describe high level factual scenarios rather than particular causes of action or avenues of enforcement. They are divided according to whether the legal action would occur, or is more likely to occur, before the relevant physical risk or after it crystallises. The framework identifies the role that the legal action can play in driving adaptation action or finance, or whether it is a consequence of adaptation or maladaptation.

Figure 4a and **Figure 4b** below illustrate the framework proposed under **Figure 1** with a simple hypothetical example associated with a single physical risk event:

Following a number of destructive king tide events in the 1970s, a local municipal government built a sea wall to protect the local coastline against a then 1-in-100 year inundation event. Over the following 40+ years, sea levels in the municipality rose by more than 20cm as a direct consequence of climate change (thermal expansion and glacial melt). In 2021, a coastal storm causes inundation far further inland than the 1-in-100 event of the 1970s. The flood damage extends to the local waste treatment facility, resulting in contamination of the water supply to a town of 200,000 people, and the death of thousands of animals from the pollutants entering local waterways. The waste treatment plant was only a few years old, built and operated to regulatory standards under a licence issued by the State government.

This is not to suggest that the circumstances hypothesised will in fact give rise to the legal rights illustrated, within each category, or within every given jurisdiction. However, it provides a useful practical illustration of the breadth of legal consequences – for a borrower and its providers of insurance and other financial products and services – that a single physical risk may occasion.

Part 2 contains additional discussion of the potential range of legal action that may arise under each category of the taxonomy and offers preliminary observations on when each kind of legal action may be more or less likely under different climate scenarios.

Taxonomy of adaptation-related legal action

Ex ante physical impact

- 

1 Ex ante legal action for a **failure to manage or disclose physical risks** (*consequence of a failure to adapt, driver of adaptation*)

A local community group, concerned about the lack of forward-looking risk analysis in the plant plans and the potential risk to the town's drinking water, seeks a court order to require the company to upgrade the plant's infrastructure to be resilient to forward-looking flood risks. Shareholder activists file a derivative action against the waste treatment company's board for a failure to ensure that the treatment plant would be fit for purpose over its intended 40-year useful life.
- 

2 Ex ante legal action against **greenhouse gas emitters** as a consequence of the need to adapt by third parties (*a consequence of adaptation*)

Local council sues Hydrocarbons'R'Us seeking the a proportionate contribution to the estimated cost of building a sea wall to protect the town.
- 

3 Ex ante legal action against **governments or regulators for inadequate consideration** of physical risks (*driver of adaptation*)

A local environmental group seeks judicial review of the State government's decision to grant the plant's licence to operate by reference to historical tide records (rather than future projections informed by current climate science).
- 

4 Ex ante legal action against **governments or regulators 'anti-regulatory' claims over elevated adaptation requirements** (*consequence of adaptation*)

The State government had previously sought to introduce more stringent planning and development regulations that would have prohibited infrastructure development within six feet of the high tide line, but the law was successfully challenged by local coastal land holders as an unconstitutional uncompensated taking.
- 

5 Ex ante legal action for **misrepresentation of physical risk exposures or adequacy of adaptation activities** (*consequence of a failure to adapt, driver of adaptation*)

As part of its stakeholder management strategy during the plant planning phase, the waste treatment plant's parent company ran a targeted online advertising campaign to promote its environmental credentials. Before the coastal inundation event, an NGO lodged a complaint against the parent company alleging a breach of the OECD Guidelines for Multinational Enterprises for misrepresenting its preparedness, alleging it had not spent any capex or opex on climate resilience programmes.
- 

6 Ex ante legal action for a **failure to comply with adaptation regulation or non-adaptation regulation that is triggered by climate impacts** (*consequence of failure to adapt, driver of adaptation*)

If the State Government had introduced new requirements in the building code for a certain elevation above high-tide mark in order to respond to the latest climate science, and the waste treatment provider did not follow these, the State Government could have brought enforcement proceedings before the coastal inundation event occurred.

Figure 4a: Framework annotated with hypothetical claims consequences

Taxonomy of adaptation-related legal action

Ex post physical impact

- 7** Ex post legal action for a **failure to manage or disclose physical risks** (*consequence of a failure to adapt*)
 Shareholders file a class action against the waste treatment company seeking to recover their loss of stock value that occurred following the inundation, alleging that they had bought or held their stock on the basis of the company's representations that the plant had been built to the highest environmental standards. The claim joins the directors of the company as accessories to the alleged misleading disclosure, and adds an additional claim for a breach of fiduciary duty for their failure to ensure that the company's disclosure risk management systems were adequate to provide a true and fair view of financial position and prospects.
-
- 8** Ex post **insurance claims for a failure to manage physical climate risks** (*consequence of failure to adapt*)
 A local provider of home, contents and business continuity insurance, faces thousands of claims as residents have to relocate, and businesses close, while water supplies are being remediated. A test case is run to determine whether the losses caused by the water outage are insured events under the relevant policies, or subject to the coastal inundation exclusion.
-
- 9** Ex post **direct legal action against financiers and guarantors** in relation to physical damage occasioned by borrowers (*consequence of failure to adapt*)
 An NGO, acting on behalf of affected Indigenous Peoples site of significant cultural heritage, lodges a complaint against a Multinational Development Bank for its investment in Bank Co, which provided project finance to the waste treatment plant, alleging a breach of the MDB's financing principles.
-
- 10** Ex post legal action for **negligent financial or professional services** which causes physical risk exposure (*consequence of failure to adapt*)
 The owner of the waste treatment plant sues the engineering company alleging that the design services were negligent in the failure to provide for inundation risks informed by contemporary climate science.
-
- 11** Ex post **contractual disputes** relating to climate damage, e.g., force majeure (*consequence of adaptation or a failure to adapt*)
 An automotive manufacturer in the neighbouring State sues a local componentry supplier for its failure to supply after it is forced to suspend operations while water supplies are being remediated. The componentry supplier in turn files a claim against the waste treatment company.
-
- 12** Ex post legal action against **governments or regulators for inadequate consideration of physical climate risks or negligence or nuisance** (*consequence of failure to adapt*)
 The local chamber of commerce sues the local municipal government for its failure to raise and reinforce the sea wall as sea levels rose. The local insurance company does the same, alleging that its claim losses were caused by the government's failure to adapt its sea wall to the reasonably foreseeable impacts of climate change. The family of a local man who died after being swept into a stormwater drain by the tidal flood files charges of criminal negligence against the municipal government.
-
- 13** Ex post legal action for **breach of adaptation-centred regulation or non-adaptation regulation that is triggered by climate impacts** (*consequence of failure to adapt*)
 The unplanned discharges (made more likely due to climate change) resulted in the operator incurring financial penalties for breaches of existing pollution codes. After the waste treatment plant was built, the State government introduced more environmental regulations which require an upgrade to infrastructure developments within six feet of the high tide line. The owner did not upgrade the plant. The EPA brings enforcement proceedings and issues a substantial fine for breach of the adaptation-centred regulation.

Figure 4b: Framework annotated with hypothetical claims consequences

1.6 Triggers for materiality assessments

The pricing of liability exposure risks is inherently complex. Liability risk exposures involve a high proportion of tail risks and large losses, with dynamic regulatory baselines, an increasingly aggressive litigation environment, a paucity of reliable data and pervasive uncertainty in risk accumulation and aggregation. As discussed above, past performance and historical litigation outcomes are not indicative of future exposure and liability. At this nascent stage, even high-level integration into credit risk assessments and underwriting problems requires the specific and significant application of institutional judgment.

Whether forward-looking liability risks are material to a borrower, book, portfolio or system will depend on a combination of internal factors to the entity and operations as well as external climate-related and other factors. Even direct (let alone secondary or tertiary) financial impacts may extend beyond the quantum of any fines, penalties or damages to, for example, legal costs, reputational damage, valuation impacts, credit rating impacts, insurance coverage limitations, contractual defaults and tender process exclusions. In some cases, legal claims may be of such significance as to render a borrower bankrupt.¹⁹

Further consideration of the relative potential materiality of different claims on different borrowers, books, portfolios, sectors or systems is far beyond the scope of this introductory briefing paper. However, as but one indicator of the potential impact of but one category of claim, the quantum of damages in past securities claims in the US could give some indication of the size of future losses in that area. The average 2019 settlement was US\$27.4 million, while 2020 saw 99 approved monetary class action settlements amounting to US\$3.26 billion compensation to eligible claimants.²⁰

Even if successfully defended, entities exposed to such legal action may suffer financial and reputational costs.

The science is changing, potential claimants' appetite for litigation is changing, the courts' appetite for hearing disputes involving climate issues are changing, and the underlying legislative and regulatory frameworks are changing. It is very challenging to quantify with any kind of rigour this rapidly evolving area.

We offer some preliminary observations on signposts that may be used as triggers for a robust materiality assessment. These include:

- financing of high-value critical municipal infrastructure;
- finance for the fossil fuel industry (including, in particular, for greenfields projects and/or borrowers without credible transition strategies);
- projects operating in jurisdictions where courts are more receptive to rights-based claims, have broad tests for standing (who can sue), or general duties of care or duties not to cause harm;
- finance to entities incorporated in jurisdictions where there is a significant volume of

19 See for example discussion in MinterEllison and 2Dii, *The Carbon Boomerang – Litigation as a Driver and Consequence of the Transition to a Low-Carbon Economy*, Part 4, September 2017.

20 Cornerstone Research, *Securities Class Action Settlements: 2019 Review and Analysis (2020)* p1; ISS Securities Class Action Services, *The Top 100 US Class Action Settlements of All-time (2021)* p2.

climate-related litigation generally, and adaptation-related litigation specifically, such as the US and Australia;

- project finance or public-private partnership (PPP) finance structures involving complex contractual arrangements; and
- all else being equal, the related-physical risk is assessed as material.

Although a forward-looking assessment of the materiality of specific claims or categories of claims is difficult, the likelihood of legal action relating to physical risks and adaptation as a whole increases or decreases in various plausible future climate scenarios.

Climate scenarios	Likelihood	Rationale
Higher localised physical risk trajectory (acute)	↑	Consequence of inaction under higher warming trajectories (noting highest deviation in pathways post-2035)
Higher localised physical risk trajectory (gradual impact)	↑	Strategic driver to compel timely action to avoid worst impacts
Higher economic transition risk trajectory – rapid disorderly	↓	Physical risk impacts minimised (noting highest deviation in pathways post-2035)
Higher economic transition trajectory – rapid orderly	↓	Legal action less likely as physical risk impacts minimised (noting highest deviation in pathways post-2035)
Economic transition trajectory – BAU (lower initial transition trajectory leading to heightened physical risks, medium to long-term disorderly economic transition)	↑	Both a strategic driver to compel adaptation action and as a consequence of heightened damage

1.7 Limitations and priorities for next steps

There are inherent limitations to the inquiry in this briefing paper. In the absence of specific facts, there are limits to the generalisations or conclusions possible. Tools and methodologies are beyond the scope of this paper. However, we set out below suggested next steps for further considerations to develop these resources. These include:

- collaboration between legal, risk managers and sustainability teams to map out how the issues raised in this briefing paper can be fed into the mechanics of risk management;
- further research to assess claims in accordance to relevance and likelihood of crystallisation, including by taking account of the likely value of the award; and
- research into whether and how different types of financing structures may be more likely to result in or be affected by legal action or liability risks relating to the physical impacts of climate change and adaptation – for example, PPP, project finance, sovereign debt, and non-sovereign commercial financing.

A close-up photograph of a classical column capital, likely a Composite or Corinthian style, showing the fluted shaft and the ornate capital. The column is positioned on the right side of the frame, extending from the bottom towards the top. The background is a clear, solid blue sky. The text is overlaid on the left side of the image.

Part 2:
**Potential
liability
exposures —
categories**

This Part contains further discussion and analysis of potential claims and enforcement avenues that may arise under each category of the climate change litigation framework. It does not purport to cover the field of relevant action. However, it provides an aid for financial institutions to understand the breadth of potential exposures that may or may not be applicable in the context of their book, portfolio or jurisdiction, and offers preliminary observations on the scenarios in which each category may be more or less likely to arise, all else being equal.

2.1 Legal action before the physical impact

2.1.1 Category 1: Ex ante legal action for a failure to manage or disclose physical risks

Overview

The claims involve ex ante legal action against corporates, directors and officers, governments, or infrastructure owners for a failure to manage or disclose physical climate risks before those risks materialise and cause physical injury or economic loss to the community or shareholders. They can be a driver of adaptation or occur as a consequence of failure to take adaptive measures.

Potential legal action includes:

- regulatory enforcement by financial regulators of securities and corporate governance laws;
- community or regulatory enforcement of environmental and pollution laws;
- shareholder action against a company and/or its directors for misleading disclosure or securities fraud;
- shareholder action directors or pension trustees for breach of fiduciary duty;
- tort claims in negligence, nuisance or trespass; and
- human rights or constitutional law claims.

Examples

Community members at risk of physical injury or property damage seeking orders to require corporate or government infrastructure owners to take adaptation action to upgrade asset base.

Case example In *Conservation Law Foundation v ExxonMobil Corp* a citizen group filed a claim under the *Resource Conservation and Recovery Act* and the *Clean Water Act* against ExxonMobil alleging that the defendants had failed to take climate change impacts into account when operating their marine distribution terminal in Massachusetts. The claimants allege the terminal is vulnerable to increased precipitation and increased magnitude and frequency of storm events and surge, and the defendant had not taken action to address the vulnerabilities despite having been long aware of them. The case is ongoing.

Activist investors seeking orders to require investees or their directors or officers to disclose physical risk vulnerabilities or adapt their long-lived fixed assets.

Case example In *Abrahams v Commonwealth Bank of Australia* two shareholders of the bank filed suit in 2017 alleging the bank failed to disclose the physical and transition risks that climate change poses to its business such that its annual report did not give a 'true and fair view of financial position and performance'. The case was withdrawn after the bank provided more thorough disclosures. Since 2017, it has become a leader in climate-related financial disclosures recommended by the TCFD. Its disclosures include how physical risks could affect its residential loan portfolio and agribusiness lending portfolio, with its scenario analysis disclosures demonstrating there will be reduced financial risks to its business with adaptation measures.

Case example In *O'Donnell v Commonwealth of Australia* a retail purchaser of government bonds sued the Commonwealth of Australia, alleging that the information memoranda associated with the bond was misleading or deceptive in its omission of climate-related risks to the country's economy and asset base. The claim also joined two officers of the Commonwealth, the Secretary of the Treasury and the CEO of the Australian Office of Financial Management, alleging a breach of their duty of due care and diligence for failing to ensure that the disclosure documents presented a true and fair view of the financial risks associated with the bonds. The proceedings are at an interlocutory stage.

Case example In *McVeigh v REST*, 23-year-old Mark McVeigh filed a suit against the corporate trustee of his pension fund alleging that it violated its fiduciary duties by failing to disclose and consider adequately the physical and transition risks to the fund's investments posed by climate change. The case settled in November 2020 on the eve of the trial with REST agreeing to set a net zero investment strategy and to implement ongoing climate risk management processes.

Key factors in understanding liability risks and its role as a driver of adaptation activities and finance

Ex ante claims for a failure to manage or disclose physical risks have the potential to be applied as a strategic mechanism to drive localised adaptation action or entity-level disclosures of vulnerabilities. In turn, this may increase adaptation liabilities of private and government sector borrowers and insureds in the mining, industrials, chemicals and infrastructure sectors.

All else being equal, exposures in category 1 are more likely to arise:

- against governments in jurisdictions with constitutional or human rights-based duties to safeguard public safety;
- against industrial defendants in jurisdictions where there are no civic duties owed by the government to the natural environment or in respect of human health;

- for plants and infrastructure (and for that matter, jurisdictions) more exposed and vulnerable to the physical impacts of climate change; and
- reflecting the ex ante nature of claims, in jurisdictions that provide a right of standing to community or strategic litigants seeking injunctive or performance-related remedies.

Potential impacts for financial institutions include:

- as a first order financial risk, where claimants take action directly against the financial institution for a failure to disclose physical risks;
- as a second order financial risk for insurers or reinsurers, where extreme weather events are not excluded from, or efficiently priced under, general insurance policies;
- as a second order financial risk for financial institutions, the cost implications associated with direct claims against commercial clients (private sector or government) in the mining, industrials, chemicals or infrastructure sectors may increase the risk of default of individual debtors. Conversely, these cost implications may be small (e.g., improving disclosure) or preventative costs could minimise future physical climate risks, resulting in net benefits for financial institutions' credit and insurance risks; and
- as a third order financial risk for financial institutions, still greater impacts are likely to arise across certain commercial lending categories due to the elevated risk of successful claims, or an elevated credible prospect with pending credible claims, regulatory investigations or settlements, which may prompt reconsideration of capital carrying requirements and credit risk pricing across sectors.

In the short term, such action may undermine credit ratings and insurability with increased litigation and infrastructure costs. Reputational risk may also represent a first order risk for financial institutions or a second order financial risk for insurers and (re-)insurers where increases in extreme weather event frequencies or severities linked to climate change are not fully captured. However, increasing the climate-resilience of infrastructure may in turn actually be beneficial to financial institutions in the mid-long term as future physical climate risks are minimised and losses to litigants (i.e., potential compensation orders) are minimal or non-existent, thereby bringing improvements to credit and insurance risks.

2.1.2 Category 2: Ex ante legal action against carbon majors for the costs of adaptation

Overview

High profile litigation against carbon majors in which claimants seek compensation for the current and future costs of adaptation occurs as a consequence of the need to adapt.

Potential legal action includes:

- recovery of actual or anticipated financial costs associated with adverse impacts brought about by climate change, where a company's action or inaction is found to contribute to that change (for example under the laws of negligence).

Examples

Individuals may bring cross-border claims against carbon majors, seeking proportionate cost recovery for loss and damage caused or anticipated from the carbon major's contribution to climate change.

Case example In *Luciano Lliuya v RWE AG*, Saúl Luciano Lliuya, a Peruvian farmer has sought damages in a German court from RWE, Germany's largest electricity producer. Filed in 2015, Lliuya's suit alleges that RWE knowingly contributed to climate change by emitting substantial volumes of greenhouse gases, bearing a measure of responsibility for the melting of mountain glaciers near his town of Huaraz, population 120,000 equivalent to its 0.47% contribution to cumulative global greenhouse gas emissions. While the case was dismissed at the lower court, the claimant's case was recognised on appeal as well-pled and admissible. The court's interim finding that a private company could potentially be held liable for climate change related damages caused by its greenhouse gas emissions marks a significant development. The case is in the evidentiary phase.

State actors may bring claims against carbon majors, seeking to recover costs for loss and damage caused or anticipated from the carbon major's contribution to climate change.

Case example In *Rhode Island v Chevron Corp*, the State of Rhode Island filed a lawsuit in 2018 against 21 fossil fuel companies, seeking for those companies to be held liable for adverse climate change impacts that had already occurred and that will occur in future. The impacts affected Rhode Island and jeopardised State-owned or operated facilities, real property and other assets. The state is seeking compensatory damages, equitable relief, punitive damages, disgorgement of profits and legal costs. Proceedings are currently on hold until the US and Rhode Island Supreme Courts consider jurisdictional issues in related cases.

Key factors in understanding liability risks and its role as driver of adaptation activities and finance

All else being equal, exposures in category 2 are more likely to arise:

- where companies have historically operated or continue to operate emissions-intensive assets or sell emissions-intensive products; and
- where companies fail to consider their level of emissions and whether those levels are consistent with the Paris Agreement.

Potential impacts for financial institutions include:

- second order liability risks to insurers for coverage of settlement or compensation orders;
- second order liability risks to banks for stranded assets and credit risks if the carbon major customer is unable to service its facilities; and

- third order indirect impacts to financial institutions through systemic risks if liability risks claims against carbon majors proceed past interlocutory stages to findings of liability or damages, and potentially result in master settlement agreements.

2.1.3 Category 3: Ex ante legal action against governments or regulators for inadequate consideration of physical risks

Overview

Statutory cases against governments or regulators for inadequate consideration of physical climate risks can drive adaptation measures affecting property prices and the price and availability of insurance.

Potential legal action includes:

- review of environmental, planning and permitting decisions issued by governmental authorities; and
- review of existing environmental regulations and adaptation strategies on the grounds that they fail to adequately secure human rights or constitutional protections.

Examples

Case example In *EarthLife Africa Johannesburg v Minister of Environmental Affairs and Others*, Earthlife challenged a Minister's decision to approve a new coal-fired power plant. The High Court of South Africa held that climate change was a relevant consideration in the environmental review of plans, even though the statute did not expressly contemplate such. The failure to consider this made the approval unlawful. The Court held that one reason for this was South Africa's commitments under the Paris Agreement. In 2018, the Minister reconsidered the permit application, but the decision was again challenged as unlawful for failing to consider site-specific climate change impacts associated with the project. The parties consented to setting aside all governmental authorisations for the coal-fired power plant.

Case example In *Sheikh Asim Farooq v Federation of Pakistan*, members of civil society filed suit against various governmental departments alleging the government had failed to protect the trees and forests in Punjab in violation of statutory obligations and petitioners' human rights as guaranteed under the Constitution. The High Court ordered the government to fulfil their obligations under the law 'to safely manage, conserve, sustain, maintain, protect and grow forests and plant trees in urban cities', noting that if the government had properly fulfilled its legal obligations, 'the forest of Pakistan could have been saved [from] further depletion and deforestation'. The Court's orders were broad reaching including instructions to government bodies to consider revising requirements and penalties under the *Trees Act*, and to issue directions to the housing societies and authorities to support the planting of trees in the green belt and issue penalties for cutting those trees down.

Case example In *Public Watchdogs v Southern California Edison Corporation* a non-profit advocacy group launched a suit against the United States Nuclear Regulatory Commission and select corporations alleging that the approval of a plan to decommission the San Onofre Nuclear Generating Station (SONGS) and bury spent nuclear fuel in the ocean risked the lives of many Californians due to prospective sea level rises affecting the fuel's storage. The plaintiff alleged a violation of the *Administrative Protective Act* and sought an injunction preventing future harmful activity. The case was dismissed on the basis that the non-profit plaintiff had not suffered differentiable injury based on speculation of a future harm.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

Ex ante claims against governments for inadequate consideration of physical climate risks has varied aims. It can be used as a form of strategic litigation designed to increase regulation of climate change and drive adaptation. Typically, there are three consequences of this type of litigation:

- consideration of climate change by administrative decision makers in individual environmental review, planning and permitting decisions;
- enforcement of existing climate-related policies, legislation and targets; and
- an increase in government mitigation measures.

All else being equal, exposures in category 3 are more likely to arise:

- in jurisdictions that where carbon emissions are a relevant consideration in decision-making for environmental or planning approvals;
- in jurisdictions where merits review is available for environmental or planning approvals;
- in jurisdictions that have made commitments under the Paris Agreement and the Kyoto Protocol;
- in jurisdictions exposed to acute physical risks or with an expected increase in the frequency and impact of extreme weather events;
- in jurisdictions which provide citizens with strong standing rights to bring an action; and
- in jurisdictions with constitutional or human rights-based duties to safeguard citizen's fundamental rights.

Potential impacts for financial institutions include:

- as a second order financial risk for financial institutions, direct claims against development approvals may decrease the bankability of projects and increase the risk of default of individual debtors. However, in the long term, increased attention on the physical risks associated with climate change during the approvals stage of projects may be beneficial to financial institutions as future physical climate risks are understood and minimised at an early stage in the project development process, reducing the scope for litigation.

2.1.4 Category 4: Ex ante legal action against governments or regulators for inappropriate consideration of climate change

Overview

Adaptation measures may be challenged in courts by disaffected citizens or property owners in ‘anti’-climate change adaptation cases. These adaptation measures have the potential to adversely impact house prices and proposed new developments. In recent times, such cases also have the potential to negatively affect governments’ human rights reputation where claims involve climate change negatively impacting standards of living for groups such as children.

Potential legal action includes:

- review of environmental, planning and permitting approvals issued by governmental authorities;
- review of zoning and overlay provisions; and
- review other regulatory adaptation measures, on the grounds they are unlawful.

Examples

Case example In *East River Park Action v City of New York*, residents of Manhattan filed a claim in 2020 against the City of New York challenging its decision to approve a ‘resiliency plan’ to protect against coastal storms and flooding that involved elevating a park on the East River by eight feet. It was alleged that closing off a section of the existing park to build the defence barrier constituted the use of parkland for a non-park purpose for which the City should have sought the State legislature’s approval. The petition stated that by not doing so, the City was in violation of the public trust doctrine. The Court rejected the public trust doctrine challenge. While the court acknowledged the significant disruption the project would cause for local residents the interruption was for a park purpose. The court noted that without the resiliency plan, there was likely not ‘even have a park at all’.

Case example In *WG Woodmere LLC v Town of Hempstead*, owners of a private golf club challenged a zoning ordinance that applied a ‘Coastal Conservation District’ to the property. The zone operated to restrict development on the golf club for the purposes of managing the ‘current and future physical climate risk changes due to sea level rise, storm surge and flooding’. The plaintiffs challenged the zoning decision, arguing it violated their equal protection and due process rights, and alleging that no comprehensive environmental study supported the adoption of the zone. The case is currently before the District Court of New York.

Case example In *Sierra Club v Von Kolnitz*, the District Court of South Carolina ordered the removal of temporary sea walls during the nesting period of sea turtles. Although the walls were designed to prevent erosion, extreme climate events and sea level rise, the plaintiffs alleged the walls were ineffective and instead interfered with the nesting habits of endangered turtles. The Court accepted the plaintiffs' arguments, and issued an injunction requiring their removal.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

All else being equal, exposures in category 4 are more likely to arise:

- in jurisdictions which provide individuals with standing to appeal planning and zoning decisions;
- in jurisdictions that lack comprehensive adaptation frameworks and that do not recognise constitutional or human rights-based duties to mitigate climate change;
- in situations where other environmental and socio-economic priorities may conflict with adaptation measures; and
- in jurisdictions that have not been exposed to physical risks and where climate change adaptation is not widely embraced.

Potential impacts for financial institutions include:

- as a second order financial risk, the non-implementation or removal of elevated adaptation measures may devalue loan surety, such as residential or commercial properties; and
- as a second order financial risk for insurers or reinsurers, the non-implementation or removal of elevated adaptation measures may result in extreme weather events not being efficiently priced under general insurance policies.

2.1.5 Category 5: Ex ante legal action for misrepresentation of adaptation activities or preparedness

Overview

Claims may be lodged for 'greenwashing' about adaptation activities and preparedness, which can occur as a consequence of a failure to undertake genuine adaptation efforts, thus driving adaptation activities. Compared with category 1, these actions do not involve a failure to disclose, but rather a misrepresentation in disclosures. They further differ from category 1 failure to manage the physical risks claims, as the actionable claim is not the failure to adapt per se, but the misrepresentation about adaptation, although this will likely also involve a failure to adapt. Misrepresentation is more likely to be an ex ante claim before the physical event materialises and loss ensues.

Potential legal action includes:

- misrepresentation claims under securities or consumer laws; and
- complaints under the OECD Guidelines for Multinational Enterprises.

Examples

Case example In *ClientEarth v BP*, an NGO filed a complaint against BP in April 2019, claiming that the corporation misled its shareholders and the public by giving misleading impressions of the role of renewables in its business to portray its impact on the climate as favourable. The complaint did not proceed after BP withdrew its advertisements in February 2020. The UK National Contact Point for the OECD Guidelines for Multinational Enterprises, however, still assessed the complaint as material and substantiated without issuing any judgment.

Case example In a case involving Germany banking heavyweight *DekaBank*, a consumer protection agency, the *Baden-Württemberg Consumer Centre*, is alleging Dekabank's 'impact calculator' offered to potential retail investors is misleading. The centre claims that the impact calculator, allowing potential investors to find out the potential environmental and social impact of their investments is misleading, as there is no evidence connected to the supposed impact.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

With an increase in the frequency and severity of extreme weather events and potential disruption on infrastructure and communities, there may be more pressure to make claims to consumers and investors that built infrastructure is resilient to the impacts of a warming world. In turn, this increases the risks that entities will misrepresent their preparedness. Just as 'greenwashing' claims have the potential to ensure the integrity of emissions reductions in the net zero transition, so too legal action highlighting misrepresentations could ensure the integrity of adaptation and preparedness in a warming world.

All else being equal, exposures in category 5 are more likely to arise:

- in jurisdictions that have strong consumer protections and shareholder disclosure laws for misleading and deceptive conduct;
- in jurisdictions that have well-resourced consumer protection agencies; and
- in jurisdictions that promote, implement and enforce the OECD Guidelines for Multinational Enterprises.

Potential impacts for financial institutions include:

- as a first order financial risk, where claimants or regulators take action directly against the financial institution misrepresentation relating to physical risks;
- increased due diligence costs in commercial lending practices to identify potential reporting failures; and
- second order liability risks to insurers for coverage of settlement or compensation orders.

2.1.6 Category 6: Ex ante legal action for a failure to comply with adaptation regulation or non-adaptation regulation that is triggered by climate impacts

Overview

Ex ante legal action for a failure to comply with adaptation-related laws can result in changes to government policy and strengthened compliance with regulatory measures by the community. Actions may be brought against governments and corporations for a failure to comply with adaptation-related regulations updated in line with the latest climate science. Physical climate impacts may foreseeably increase the probability and magnitude of breaches of existing laws, such as health and safety or environmental regulations, with legal action arising before the physical climate impacts on assets themselves.

Potential legal action includes:

- breach of adaptation-related building codes;
- breach of operating permits and licences;
- claims against government departments for administrative decisions in breach of adaptation-related environmental laws or planning policies;
- claims against governments for breaches of human rights, where those rights are interpreted as requiring climate change adaptation; and
- breach of environmental consents before direct physical impacts on assets.

Examples

Case example In *Ashgar Leghari v Federation of Pakistan*, a Pakistani farmer successfully sued the national government for its failure to adapt to climate change in accordance with the country's 2012 National Climate Change Policy. The Court ruled that the Government's 'delay and lethargy' in implementing adaptation measures to comply with the Policy infringed fundamental human rights. The Court ordered the Pakistani Government to create a Climate Change Commission and nominate officials who would implement the Policy and its adaptation goals.

Case example In *Greenpeace v Spain*, Greenpeace filed a suit against the Spanish Government, alleging a violation of Regulation (EU) 2018/1999, which requires the Spanish Government to approve a National Energy and Climate Plan containing adaptation and mitigation strategies. At the date of filing, the Spanish Government was yet to draft such a plan. Soon after proceedings began, the Government released its Long Term Decarbonisation Strategy for 2050. Greenpeace amended the suit to challenge the lack of a 2030 plan. The matter is currently before the Supreme Court.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

Ex ante claims against corporations for a failure to comply with adaptation laws are generally aimed at compelling the defendant to comply with existing regulatory requirements. In this respect, they may prompt physical changes at sites owned and run by a corporation (i.e., alterations to infrastructure), as well as changes to policies and procedures. Where they involve breaches of non-adaptation regulations, they show the potential for existing environmental or health and safety laws to respond to the challenges of a changing climate.

Ex ante claims against governments for inadequate adaptation may result in:

- strengthened implementation and enforcement of existing climate-related policies, legislation and targets;
- changes to government policy and adaptation strategies; and
- the invalidation of governmental administrative decisions concerning environmental, planning and permitting issues.

All else being equal, exposures in category 6 are more likely to arise:

- in jurisdictions that include adaptation as a relevant factor in planning legislation;
- in jurisdictions that have legislative or constitutionally-enshrined human rights protections;
- in jurisdictions which provide citizens and community groups with strong standing rights to bring an action; and
- in jurisdictions with strong environmental, health and safety laws and regulatory enforcement.

Potential impacts for financial institutions include:

- financial liability associated with enforcement proceedings, litigation and penalties issued in respect of breaches of adaptation laws;
- second order impacts for insurance arising from such litigation;
- financial costs associated with upgrading existing developments and adaptation procedures;
- a reduction in the number of planning permits and new developments issued, especially in ecologically sensitive areas; and
- when new developments are approved, strengthened adaptation requirements may increase the cost of the project. However, in the long term, increased adaptation measures and compliance may be beneficial to financial institutions as they may minimise the vulnerability of infrastructure to physical climate risks and decrease the risk of ex post litigation.

2.2 Legal action after the physical impact

As the physical risks of a changing climate increasingly materialise, there is likely to be legal action by claimants seeking to reallocate loss or obtain compensation for damage, which could affect credit ratings, insurers and asset prices.

2.2.1 Category 7: Ex post legal action for a failure to manage or disclose physical risks as a consequence of a failure to adapt

Overview

Ex post legal action against corporates, directors and officers, governments, or infrastructure owners for a failure to manage or disclose physical climate risks after those risks materialise and cause physical injury or economic loss to the community or shareholders, occur as a consequence of a failure to adapt.

Potential legal action includes:

- regulatory enforcement by financial regulators of securities and corporate governance laws;
- community or regulatory enforcement of environmental and pollution laws;
- shareholder action for misleading disclosure/securities fraud or breach of fiduciary duty;
- tort claims in negligence, nuisance or trespass; and
- human rights or constitutional law claims, including uncompensated takings claims.

Examples

Case example In *York County v Rambo*, bond investors brought a securities action against Pacific Gas & Electricity (**PG&E**) after investigations found that PG&E was implicated in causing the 2017/18 Californian wildfires, resulting in a dramatic reduction in the value of the bonds. Among other things, PG&E failed to follow applicable laws around vegetation management, did not properly maintain equipment and had poor wildfire safety practices. PG&E's practices contradicted representations made in bond offering documents, and investors brought claims for resulting financial loss.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

The threat of ex-post claims incentivises thorough investigation and disclosure of climate vulnerabilities. This will drive adaptation as companies and funds seek to avoid liability for financial loss incurred by investors following inadequate climate disclosure. As jurisprudence develops, the threat of action against companies and governments for physical damage caused by emissions will drive adaptation in business activities.

All else being equal, exposures in category 7 are more likely to arise:

- in areas that are vulnerable to acute physical impacts of climate change (i.e., the areas where physical damage is most likely to occur);

- in the short term, against companies and funds operating in jurisdictions with sophisticated financial disclosure regulations and effective legal systems; and
- in the medium term, against entities whose activities result in high levels of emissions or environmental damage, and in jurisdictions with well-developed legal systems and well-established causes of action (particularly in tort).

Potential impacts for financial institutions include:

- increased onus to investigate and disclose climate-related vulnerabilities in investment portfolios;
- increased risk profiles for high-emissions projects, driven by litigation exposure and the prospect of significant compensation claims being brought; and
- changes to the values of assets exposed to climate change impacts as well as higher insurance premiums in relation to those assets.

2.2.2 Category 8: Ex post legal action against insureds for a failure to manage physical climate risks

Overview

Strategic ex post insurance-related claims may drive adaptation measures. Insurers have signalled to municipalities and the private sector that they cannot rely on insurance when loss and damage are reasonably foreseeable and there has been a failure to act. Cases of this nature highlight the need for municipalities and the private sector to consider the adequacy of infrastructure, the data relied upon when the infrastructure was built and the potential for negligence-related claims. Pre-empting claims of this nature could drive adaptation, as they could lead to proactive measures designed to avoid litigation.

Further, this is a signal to local governments that insurers are not going to accept financial responsibility and will reconsider insuring properties in areas deemed to be risky. The financial implications for governments, who may end up being an insurer of last resort, may also drive adaptation. In order to avoid situations in which insurance is limited or unavailable, governments may begin to proactively manage physical climate risks.

Potential legal action includes:

- tort (negligence or nuisance); and
- breach of statutory duty.

Examples

Case example In *Illinois Farmers Insurance Corporation v Metropolitan Water Reclamation District of Greater Chicago*, a group of insurers sued Chicago's wastewater management authority, alleging that the government defendant's failure to implement reasonable stormwater management practices and increase stormwater capacity resulted in increased payouts to the plaintiff's insureds after heavy rains in April 2013, which resulted in sewer water flooding the insured's properties. The plaintiffs alleged that the defendant failed to remedy known dangerous conditions and was negligent in its maintenance of the stormwater system. The lawsuit was withdrawn, however it has raised important issues about the role of local governments and municipalities in protecting policyholders' interests.

Case example In a series of cases against ExxonMobil, local US governments, private well owners and citizens have brought claims against the energy major, alleging it was negligent in adding MTBE to its gasoline, which subsequently leaked from underground storage tanks into local drinking sources across the country. The litigants have sought and were awarded damages to remediate, install new wells and finance construction of treatment plants to make water drinkable in their regions. Damages were awarded even though in some cases it was forecast the contamination would not peak for another 20 years. In *City of New York v Exxon Mobil Corp*, the court noted that a water provider should not be prevented from bringing suit just because it has not yet suffered injury. If this were to occur, the pollution could worsen to the point that it would be illegal for the water provider to provide water to the public, and by which stage litigation would be largely meaningless.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

Ex post claims of this nature create a clear signal to municipalities and the private sector that they should not rely on insurance when loss and damage are reasonably foreseeable and there has been a failure to act. Over time, they assist with providing driver for municipalities and the private sector to consider the adequacy of infrastructure, the data relied upon when the infrastructure was built and the potential for negligence-related claims.

All else being equal, exposures in category 8 are more likely to arise:

- in areas that are vulnerable to acute physical impacts of climate change;
- where damage from these physical impacts is suffered on a large scale, prompting mass claims from insureds;
- in jurisdictions that lack comprehensive adaptation and environmental management policies or, if such policies exist, in those jurisdictions that fail to enforce them; and
- in jurisdictions that have strong negligence or nuisance laws.

Potential impacts for financial institutions include:

- cost implications of investigating the liability of insureds and/or third parties for damage;
- litigation associated with establishing the liability of insureds, governmental instrumentalities and/or third parties for damage; and
- revenue implications associated with reduced policy offerings and refusal to insure properties in high-risk areas.

2.2.3 Category 9: Ex post direct legal action against financiers and guarantors in relation to physical damage occasioned by borrowers as a consequence of a failure to adapt

Overview

Ex post claims against public or private banks, investors or insurers for financing borrowers or insureds that cause damage to third parties (including communities and indigenous groups) as a consequence of the borrower's or insured's failure to adapt or the financier's breach of relevant laws or standards relating to adaptation. Potential defendants include lenders or other statutory guarantors, underwriters or investors, including multilateral development banks, export credit agencies, or sovereign wealth funds.

Potential legal action includes:

- breach of adaptation-related laws by the borrower or the insured;
- breach of OECD Guidelines for Multinational Enterprises;
- breach of due diligence and environmental impact assessment requirements;
- breach of financier's governing documents or policies; and
- breach of fiduciary duty.

Examples

Case example In *Inclusive Development International (IDI) v International Finance Corporation*, non-profit supported community representatives in Indonesia filed a complaint against the International Finance Corporation (IFC) for its indirect financing of a mining project in the mountain springs of Kendang. IFC held an equity investment in Raifeissan Bank, the financier of the company undertaking the project, HeidelbergCement. The complaint to the IFC's Compliance Advisor Ombudsman alleged the IFC breached its Performance Standards in not getting the consent of local Indigenous Peoples. The complaint was dismissed after it was revealed the IFC had divested of its equity stake in the bank just before the complaint was filed. Although related to the impacts of the mine and before the alleged damage, this type of claim could be lodged against a financier for damage caused by a failure to adapt plant or infrastructure to extreme weather events or chronic climate impacts.

Case example In *Friends of the Earth Australia v Australia and New Zealand Banking Group (ANZ)*, Friends of the Earth filed a complaint with the Australian National Contact Point alleging that ANZ had breached its duties under the OECD Guidelines by remaining ‘the biggest financier of fossil fuels’ in Australia. Although the complaint predominant concerned ANZ’s failure to disclose its indirect emissions, it also alleged that ANZ was ‘failing to prevent...adverse environmental impacts’. To underscore the effects of ANZ’s financing of carbon-intensive industries, three survivors of the 2019-20 Australian bushfires signed on to the complaint. While the complaint does not directly link ANZ’s investments to the bushfires, the case represents another step towards holding financiers responsible for physical damage suffered because of their lending practices. The complaint is currently being assessed.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

The potential for direct exposure for institutions, and the potential for exposure as a result of a breach or default by a borrower, both act as clear drivers for adaptation activities in circumstances where damage is occasioned by borrowers.

All else being equal, exposures in category 9 are more likely to arise:

- in jurisdictions that promote, implement and enforce the OECD Guidelines for Multi-national Enterprises;
- in jurisdictions that have strong regulatory frameworks whereby financiers can be liable for losses caused by borrowers;
- in jurisdictions where financial institutions can be liable for a breach of fiduciary duty to a third party who suffers loss; and
- in jurisdictions that lack comprehensive climate policies and where the transition away from conducting and lending to carbon-intensive industries is delayed.

Potential impacts for financial institutions include:

- increased exposure to litigation and liability to compensate third parties for damage suffered as a result of failures to adapt;
- financial loss and reputational damage in the event that such litigation is successful;
- changes to financing and insurance policies to minimise exposure to carbon-intensive borrowers; and
- increased due diligence costs in commercial lending practices to assess the risk-profile of a potential borrower.

2.2.4 Category 10: Ex post legal action for negligent financial or professional services as a consequence of a failure to adapt

Overview

Claims against architects, engineers or financial services professionals alleging negligent financial or professional services that did not take into account the impacts of a changing climate may affect the banking sector (as litigant) or insurance sector (professional insurance). Under scenarios of inaction, claims against architects, engineers or financial services and other professionals alleging negligent financial or professional services that did not take into account the impacts of a changing climate may occur as a consequence of a failure to adapt.

Potential legal action includes:

- tort claims in negligence;
- regulatory enforcement by financial regulators of securities and corporations law (e.g., claims for misleading and deceptive conduct);
- shareholder action for misleading disclosure, securities fraud or breach of fiduciary duties (where applicable, e.g., financial services professionals); and
- breach of relevant statutes, for example building and engineering codes.

Examples

Case example In *Lijo Abraham and Niji Thomas et al v Costello, INC*, Texas-based homeowners filed a class action against real estate developer Howard Highes Corp., The Woodlands Land Development Co. and LJA Engineering alleging that the defendants negligently built a community on a known flood plain, tantamount to negligence, gross negligence and violations of the Texas *Deceptive Trade Practices Act*. The homeowners have sought compensation for home repairs, personal property replacement and pain, suffering and undue hardship caused by Hurricane Harvey. The case is ongoing.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

Some courts have already taken a broad approach to the concept of ‘reasonable foreseeability’ – that is, professionals knew or should have known of the impacts of climate change and adapted their practice to them and failing to act is a breach of their professional duties.

As architects, engineers and financial service professionals are increasingly forced to broaden their lens’ to incorporate climate risk into their designs, constructions and risk assessments, citizens, governments and banks alike may no longer be accepting excuses that the acute and gradual onset impacts of climate change are not reasonably foreseeable.

All else being equal, exposures in category 10 are more likely to arise in jurisdictions:

- with strong tort-based duties imposed on professionals;
- against defendants in jurisdictions with strong corporate governance laws but lack in civic duties owed by the government to its citizens; and
- exposed to acute and gradual onset physical risks, with acute extreme weather likely to provide initial triggers.

Potential impacts for financial institutions include:

- increased claims for providers of professional negligence insurance;
- as the consequences of climate change unfold, banking institutions may find themselves increasingly in the position of a litigant as they are led astray by negligent professional advice and seek to claw back losses suffered as a direct result of defendant's negligence or indirectly, joining direct victims in their claims; and
- if successful, liability risk may be of sufficient scale to lead to second and third order credit risks affecting the insurance and financial sectors who have failed to embed climate risks into pricing strategy and investment portfolio respectively.

2.2.5 Category 11: Ex post contractual disputes relating to climate damage as a consequence of a failure to adapt or maladaptation

Overview

Litigation between counterparties seeking damages for breach, or to avoid or repudiate obligations as a result of supply chain disruption or related failure to meet performance standards. There may also be insured vs insurer disputes over the scope of policy indemnities.

As the physical impacts of climate change manifest and disrupt business as usual practices, counterparties will seek damages for breach, or to avoid or repudiate obligations as a result of supply chain disruption on extreme weather events made more frequent or intense by climate change, invoking 'force majeure' or 'cas fortuity' clauses or related failure to meet performance standards.

Potential legal action includes:

- breach, avoidance or repudiation of contract, contractual warranties or performance standards; and
- force majeure or frustration of contract.

Examples

Case example On 12 November 2019, **Telstra and NBN Co** made the decision to temporarily suspend disconnection activities under the Migration Plan for their regulated telecommunications infrastructure in Australia. This followed the declaration of ‘catastrophic’ fire danger and a week-long state of emergency in NSW, and significant and widespread fires occurring across Queensland. This decision was made to minimise risks to front-line staff, and to protect existing lines of communication for affected customers. Telstra advised the government regulator the ACCC that it considered the bushfires constituted a Force Majeure Event under the Migration Plan and was not in breach of its inability to perform. This position was accepted by the ACCC, thus avoiding litigation.

Case example The recent case of **Stephens Ranch Wind Energy LLC v Citigroup Energy at al** involved a dispute over a failure to supply under two fixed-price power purchase agreements, under which Stephens Ranch had agreed to supply certain amounts of power to Citigroup from its 210 turbine, 376 megawatt wind farm in Texas. The 2021 Texas blizzards froze the turbines, halting generation. Citi sought compensation from Stephens Ranch for the costs associated with the outage, including US\$113m spent on buying electricity (at premium rates during the blizzard) from other generators to fulfil Citi’s own supply obligations to third parties. Stephens Ranch refused to pay on the basis that their failure to supply was exculpated by the power agreements’ force majeure clauses, as the blizzard was an ‘act of god’. On 8 April 2021, the Supreme Court of New York found in favor of Citigroup in holding that the force majeure clause did not excuse Stephens Ranch’s failure to supply. In finding that the blizzard was not an unanticipated event that met the standard of force majeure, Judge Reed made specific reference to Federal Energy Regulatory Commission (FERC) reports that had concluded that such winter storms were likely to take place in Texas going forwards, and recommending that wind farm operators take preventative measures to ‘winterize’ their turbines. His Honour made specific reference to the role of climate change in impacting on the frequency and intensity of extreme weather events beyond historical baselines.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

All else being equal, exposures in category 11 are more likely to arise:

- with the advent of more extreme and increasingly frequent acute weather events;
- in industries exposed to the physical elements, such as the construction, property, mining and health sectors where acute weather events can have significant impact on business-as-usual operations; and
- where contractual parties use boilerplate and out-dated contractual risk allocation provisions.

Potential impacts for financial institutions include:

- second order impacts for insurance arising from litigation over the scope of indemnity obligations between the insurer and insured under financial insurance lines, such as commercial, D&O and professional indemnity;
- second order financial impacts for financial institutions as cost implications associated with direct claims against commercial clients in the mining, industrials, chemicals or infrastructure sectors may increase the risk of default of individual debtors; and
- increasing liability risk for over-valuation or inaccurate systems risk foreshadowing that do not adequately account for energy transition risks generating third order financial risk for financial institutions.

2.2.6 Category 12: Ex post legal action against governments or regulators for inadequate consideration of physical climate risks or negligence or nuisance

Overview

Under scenarios of inaction, government entities and regulators may increasingly face claims where government owned assets or infrastructure are compromised by weather events associated with or exacerbated by climate change or gradual onset events, or where government responses to these events cause damage to private property. Government immunities may only apply in certain circumstances. Failures to manage physical risks which cause injury or economic loss to community stakeholders may be a strategic driver of adaptation measures.

Potential legal action includes:

- suits in negligence against government bodies for breaching a duty of care to members of the public; and
- suits in nuisance against government instrumentalities for causing, permitting or failing to stop climate-related harms.

Examples

Community members at risk, including insurers traditionally underwriting these risks may seek compensation where the government knows of material physical risk and fails to act to prevent injury or economic loss.

Case example In *Ralph Lauren v Byron Shire Council*, a group of property owners sued the local government for the costs of building shoreline protections on their land and compensation for the lost value to their properties arising from erosion. The Council had installed a hard shoreline armouring and also issued planning documents preventing the property owners from armouring their own sections of shoreline. The plaintiffs alleged that either the Council was negligent for installing hard shoreline armouring that displaced wave action to the plaintiffs' property, exacerbating erosion there, or that the Council's armouring was a public nuisance.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

Ex post legal action against governments or regulators for inadequate consideration of physical climate risks, negligence or nuisance may be a strategic mechanism to drive local adaptation therefore increasing adaptation liabilities of the government sector lenders and insurers.

All else being equal, exposures in category 12 are more likely to arise in jurisdictions:

- in areas that are particularly vulnerable to acute physical impacts of climate change, with an increase in the frequency and impact of extreme weather events;
- in which government entities place overreliance on historical norms or are lagging in robust assessment and strategic planning in relation to climate-related risks at operational and project based levels;
- with a constitutional or human rights-based duties to safeguard public safety; and
- that provide a right of standing to community or strategic litigants seeking injunctive or performance-related remedies.

Potential impacts for financial institutions include:

- adverse asset valuations of assets exposed to climate change impacts;
- as a second order financial risk for insurers or reinsurers where extreme weather events are not excluded from, or efficiently priced under, general insurance policies;
- cost implications associated with direct claims against government clients; and
- increased due diligence costs in commercial lending practices to identify potential regulatory exposures.

2.2.7 Category 13: Ex post legal action for breach of adaptation-centred regulation or non-adaptation regulation that is triggered by climate impacts

Overview

Government entities and regulators may face claims where government owned assets or infrastructure are compromised by weather events associated with or exacerbated by climate change or gradual onset events, or where government responses to these events cause damage to private property. Government immunities may only apply in certain circumstances. It may also include administrative law appeals against government decisions alleged to have been made without adequate consideration of adaptation-related criteria.

Potential legal action includes:

- administrative law challenges to decisions making under environmental or planning regulations;
- enforcement or statutory damages action for failing to comply with regulatory requirements; and

- breach of existing non-adaptation centred regulation, e.g., health and safety or environmental regulations, which occurs due to the materialisation of climate impacts.

Examples

Case example In *Lho'imggin v Her Majesty the Queen*, First Nations organisations in Canada sued the Canadian Government for failing to meet its Nationally Determined Contribution under the Paris Agreement and for failing to use its powers under environmental legislation to reject applications for greenhouse gas emitting projects. The plaintiffs alleged they had experienced significant warming effects on their territories and expected to experience negative health impacts due to climate change. They sought an order requiring the government to implement more stringent adaptation measures. The Federal Court dismissed the plaintiffs' claims, but an appeal has been lodged.

Case example In the Canadian case *Burgess v Ontario Minister of Natural Resources and Forestry*, property owners filed a class action against the Ministry of Natural Resources, arguing the Ministry had failed to adapt to changed climatic circumstances (high water levels and floating ice), leading to several floods that destroyed private property. They sought C\$900 million in damages for the Ministry's negligence. However, the case was discontinued at the lead plaintiff's request. Although not directly relating to climate change adaptation, it gives an example of the types of ex post legal action which may arise for breach of adaptation-centred regulation in the future.

Key factors in understanding liability risks and role as drivers of adaptation activities and finance

Actions for regulatory breach will operate to enforce and drive compliance with adaptation-focused regulations, or general environmental or health and safety regulations.

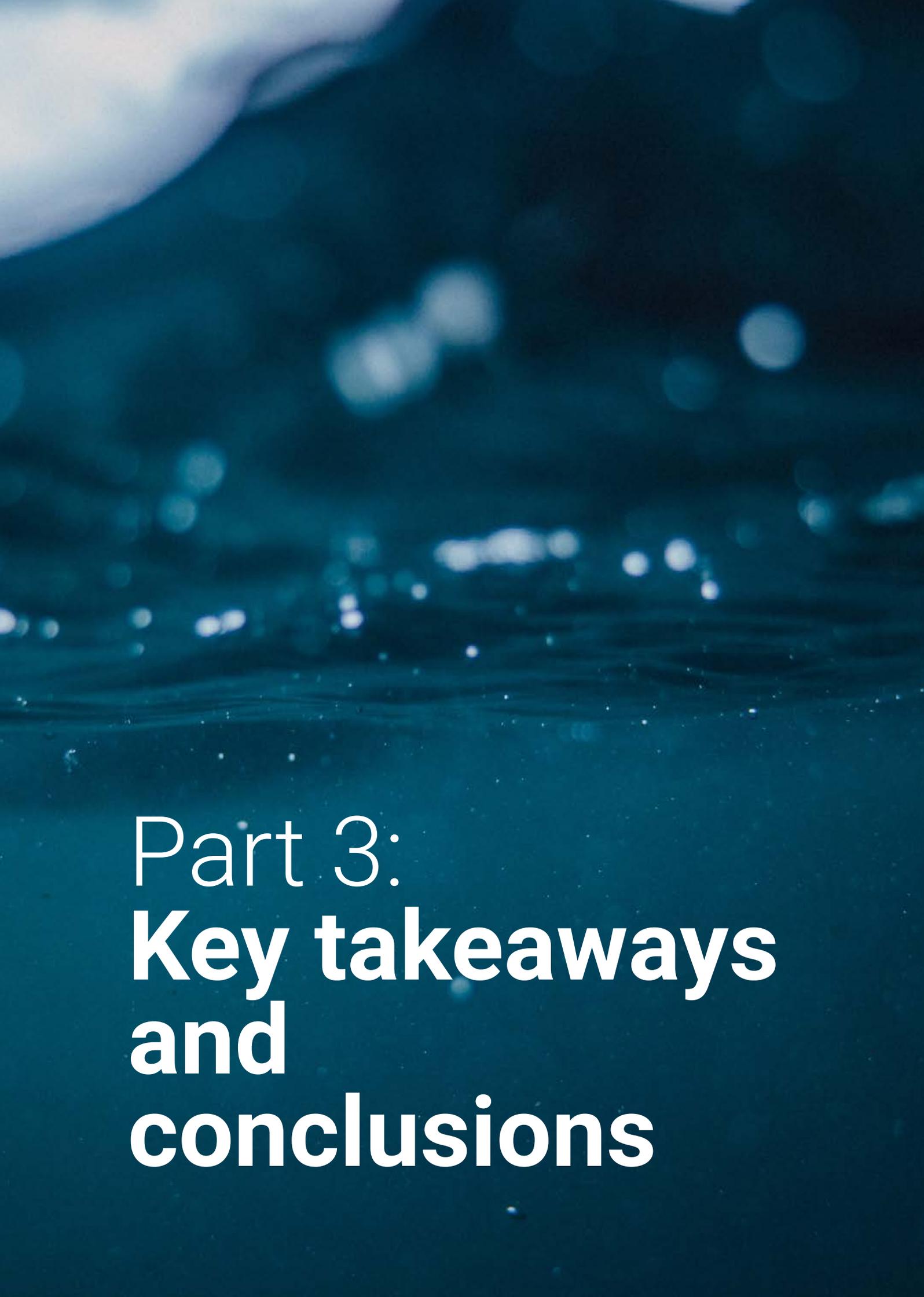
All else being equal, exposures in category 13 are more likely to arise:

- in jurisdictions that have set clear emissions targets and implemented policy frameworks to achieve them. These are the jurisdictions most likely to have regulations in place under which action will be brought;
- under regulations that are administered by well-resourced and active regulators (geographically, these regulators are likely to operate in the Global North);
- in jurisdictions with strong environmental, health and safety laws and regulatory enforcement; and
- in areas that are vulnerable to acute physical impacts of climate change (i.e., the areas where physical damage is most likely to occur).

Potential impacts for financial institutions include:

- increased costs of regulatory compliance for projects under finance as frameworks become stricter;

- increased due diligence costs in commercial lending practices to identify potential regulatory exposures;
- greater impacts arising across certain commercial lending categories due to the elevated risk of regulatory investigations, which may prompt reconsideration of credit risk pricing across sectors;
- financial liability associated with litigation, compensation orders and penalties issued in respect of breaches of adaptation laws; and
- second order impacts for insurance arising from such litigation.



Part 3:
**Key takeaways
and
conclusions**

Climate change litigation and other legal action can act as a driver and consequence of adaptation to the physical risks associated with climate change. However, understanding of the function and magnitude of climate-related litigation remains nascent within the financial services sector. This may lead to a mispricing of physical risks, and a limiting of the availability of finance for adaptation to those risks.

In order for a financial institution or prudential supervisor to quantify the potential credit risk impact of climate change litigation to a given project, borrower, portfolio, institution or system, they must first understand the magnitude (likelihood x impact) of that risk in a given context, and its materiality. Institutional capacity to undertake those assessments, in turn, requires a foundational understanding of:

- the nature and scope of climate change litigation risks as a driver or consequence of adaptation or a failure to adapt, and their temporal dynamics (i.e., before or after the physical risks to which they relate);
- the role of litigation as a risk transmission mechanism with secondary and tertiary impacts, including how litigation may drive or inhibit further action on adaptation, and reduce or raise barriers to the availability of adaptation finance; and
- the contexts or scenarios in which various legal avenues are more likely to be pursued, in what sectors and against which market actors.

This briefing paper provides a framework by which institutions can consider the range of climate-related liability risks to a borrower, book, portfolio or system – both before and after the relevant physical risk crystallizes.

Climate change litigation and other legal action can extend both the breadth, and temporal relevance, of the risks and harms associated with its physical impacts. Legal action, or the credible threat thereof, can act as both a driver of adaptation to the physical risks associated with climate change and as a consequence of maladaptation or a failure to adapt. Legal action can arise ex ante the physical risk to which it relates, and thus can bring forward the time horizon in which such risks are material. Legal action can also occur after the crystallisation of a physical risk into an event, acting to allocate related harms, as a catalyst of demand for further adaptation action, and as a mechanism to uncover efficient pricing of adaptation finance.

A single physical risk can catalyse a range of legal exposures for a borrower, related government authorities and commercial counterparties, and the institutions that provide them with financial services. Accordingly, institutions should consider the financial impact of legal action relating to physical risks, which extend far beyond the direct cost and credit risk to individual borrowers or insureds. The market signal can also have secondary impacts at a portfolio level (with sector, geographic or jurisdictional contagion) and, where impacts drive a shift of such magnitude to impact the financial system, tertiary impacts. These include financial shocks and regulatory capital impacts, which can flow through to the broader economy.

All else being equal, the significance of litigation and enforcement action as a driver of adaptation to physical risks associated with climate change, and as a mechanism to reduce the barriers to adaptation finance at the necessary scale, will be greater in high-emissions scenarios, although the implications of lower emissions scenarios for physical risks—and therefore related liability risks – are not insignificant. It will also be

greater in circumstances where regulatory frameworks and/or real asset owner adaptation action remain under-developed in proportion to the relevant risk.

This briefing paper provides a key input from which institutions can understand climate change litigation as a mechanism to reduce barriers to the availability of adaptation finance, and on which to build more holistic climate risk and pricing models.

The nature and magnitude of exposures – by borrower, insured, portfolio and system – will be unique to each institution. Whilst this briefing paper provides a foundational assessment analysis of the relevance of climate change litigation as a driver or consequence of adaptation and adaptation finance, the complex task lies ahead for financial institutions and their supervisors to quantify the potential risks associated with climate change legal action with such degree of particularity that can be robustly applied into strategy, product development and credit pricing.

Until meaningful tools are developed, it may be prudent to start with a high-level sectoral assessment of climate-related physical risks and litigation exposures across, for example, a bank's loan book in order to prioritise the detailed assessment. This will require collaboration between credit risk managers, sustainability professionals and lawyers. For some books the risk may be relatively easy to determine. For example, for a commercial agriculture book containing a small number of very large loans with proceeds dedicated to a limited range of crops across limited jurisdictions. For others, such as a book of revolving credit facilities issued to SMEs across a myriad of sectors in diverse jurisdictions, the task will be exponentially more difficult. Whilst such proxies are far from perfect, a failure to integrate litigation as a factor in climate risk modelling and stress-testing may result in the systematic under-pricing of associated risks.

In this paper, we have offered some preliminary observations on signposts that may be used as triggers for a robust materiality assessment. And while forward-looking assessment of the materiality of specific claims or categories of claims is difficult, the likelihood of legal action relating to physical risks and adaptation as a whole increases or decreases in various plausible future climate scenarios, particularly the success and speed of the transition.

Priorities for next steps

Building tools and methodologies for the robust materiality assessment of liability risks relating to adaptation is required to adequately price these risks and respond with risk mitigation measures that reduce financial risks to institutions, and to communities and societies at large. Suggested next steps for further considerations to develop these resources include:

- collaboration between legal, risk managers, sustainability teams to map out how the issues raised in this briefing paper can be fed into the mechanics of risk management;
- further research to assess claims in accordance to relevance and likelihood of crystallisation, including by taking account of the likely value of the award; and
- research into whether and how different types of financing structures may be more likely to result in or be affected by legal action or liability risks relating to the physical impacts of climate change and adaptation – for example, PPP, project finance, sovereign debt, and non-sovereign commercial financing.

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