KPMG

Chapter Zero New Zealand
The Directors' Climate Forum

Institute of DIRECTORS NEW ZEALAND

Financial quantification: From climate risk to value creation

Informing long-term strategy and decision-making

March 2026

Boards are increasingly required to make long-term decisions in an environment defined by uncertainty; from climate risk and nature degradation, to resource constraints, capital availability, insurance settings, and supply chain disruption. While climate reporting requirements have brought greater attention to emissions and risk disclosure, the underlying challenge is broader. Directors must ensure that decisions about strategy, investment, and resilience are grounded in a clear understanding of value, risk, and trade-offs, regardless of whether their organisation is formally required to report. In addition, the interconnectivity between climate and nature means these risks and opportunities should be addressed together.

Consistent with the recently refreshed Guiding Principles for Climate and Nature Governance[1] from the World Economic Forum (WEF), and Chapter Zero New Zealand's updated mission, boards are increasingly expected to treat climate change and nature loss as interconnected drivers of risk, opportunity, and enterprise value, embedding both into core strategy and decision-making rather than treating them as standalone issues. As such, where appropriate, the concepts and considerations in this guide have been extended to encompass both climate and nature-related risks, dependencies, and opportunities.

"For today's boards, climate and nature represent some of the greatest opportunities for growth and renewal. They are redefining markets, driving technological innovation and influencing where investment flows. Subjects that once sat outside the boardroom are now central to business performance, resilience and value creation."[1]

This guide is not about compliance; it is about improving decision quality. Quantification, when used well, helps boards move beyond assumptions and narratives to test where risks and opportunities sit, how material they are, and what choices matter most over time.

Clearly articulating how climate and nature impacts are linked to financial outcomes and enterprise value has become increasingly important for boards seeking to make prudent, long-term investment decisions. Rather than being driven by disclosure, an effective financial quantification process supports clearer strategic choices, more disciplined capital allocation, and improved understanding of long-term value.

Done well, financial quantification can equip businesses to thrive in a changing world, build resilience, and strengthen stakeholder confidence.

Boards and management have an opportunity to embed climate and nature considerations into strategic planning, capital allocation, and operational decision-making. By integrating quantification into existing business and financial planning processes, organisations can support more informed decisions and make better use of established governance and performance frameworks.

By connecting climate and nature-related risks and opportunities to your organisation's long-term value, your business can move beyond compliance and use the insights to drive competitive advantage.

A robust approach to assessing the financial impacts and implications of these risks and opportunities can offer substantial benefits for organisations that are willing to invest in the process. It allows organisations to:

- **Better understand and unlock enterprise value, connecting climate and nature-related risks and opportunities to strategic decision-making and long-term organisational performance.** Page 4
- **Ensure financial statements show fair presentation of an organisation's financial position, performance, and cash flows.** Page 7
- **Meet anticipated financial impact requirements of climate reporting and focus disclosures on the most material climate risks.** Page 8

This work is new, complicated, and there are lots of different ways to do it. This guide outlines practical tips to get started or mature your approach. Page 11

[1] World Economic Forum: Board Leadership for Growth and Resilience: Guiding Principles for Climate and Nature Governance

Who this guide is for

This guide aims to provide practical, decision-focused guidance for boards and executive teams as you navigate the complexities involved in connecting climate and nature-related risks and opportunities to your organisation's long-term value. Whether responding to regulatory obligations, seeking to create or protect business value, aiming to better understand your risk profile, or proactively managing stakeholder expectations, a robust approach to assessing the financial impacts of climate and nature can unlock critical insights. These insights support informed decision-making, strengthen risk management and capital allocation, and help guide strategic direction. By developing a robust and informed process, organisations can embed resilience and value creation in increasingly disruptive and disrupted operating environments where long-term growth, resilience, and productivity aspirations have become harder to achieve.

"Disclosing raw numbers about climate risk can provide a useful snapshot about where an organisation might be at, but that alone is not enough. Effective risk management is more about building a process that adds value over time. Assessing and measuring progress over time by reference to hard data helps the board, management, and stakeholders assess how well these risks are being managed. As directors we need to ensure that process is in place and is operating effectively." Mark Verbiest - Director

Unlocking enterprise value

Creating and protecting value is becoming increasingly complex due to greater volatility, disruption, and uncertainty across markets, geopolitics, and operating environments. Climate impacts, nature dependencies, and the implications of transitioning to a sustainable, resilient, climate- and nature-positive net zero economy are compounding this. However, applying a climate and nature lens to value analysis, and importantly, quantifying the scale of potential risks and opportunities, can help unlock enterprise value.

The nature of the risks and opportunities associated with climate action is increasingly familiar to boards and executives, as is their impact on value creation and value erosion (see Box 1 and Table 1). Familiarity with nature risks and opportunities will similarly grow as maturity increases. However, with an abundance of potential actions, and growing capital constraints, identifying the most critical and beneficial actions is challenging, particularly for those that have already exploited the 'low-hanging fruit'.

A robust financial quantification process is critical to the well-informed prioritisation of these opportunities by supporting the assessment of both materiality and the scale of opportunity. Examining the relative strength of the connections between an organisation's value drivers to climate exposures and nature dependencies can help boards distinguish between 'no regrets' and 'watch and wait' options, and make more confident decisions about capital deployment, investment, and divestment. It is a critical tool alongside the agile cultures and adaptive strategies that are essential for resilience and long-term growth.

Box 1

In BCG's 2025 survey, How companies are tackling the climate challenge-and creating value, **82% of surveyed companies say they have captured economic benefits from decarbonisation.** These benefits stem from:

- Operational savings from efficiency gains and resource optimisation.
- Revenue growth from sustainable products.

Companies also see the value at stake for climate adaptation and resilience. Those actively investing in adaptation are achieving near-term financial gains equal to 1% of revenue. Nearly half of the companies report that their climate risk adaptation efforts generate a return on investment of more than 10%, demonstrating that proactive preparation delivers real and measurable value.

"Quantification should inform risk and strategy, keeping options alive and enabling organisations to remain resilient under different outcomes. This is critical to preserving long-term value." Abby Foote - Director

Examples of how climate-related risks and opportunities can impact enterprise value

Table 1

	Opportunities to unlock value	Value erosion risks
Top line	• Increased demand for low-carbon products • Access to new green markets (e.g. sustainable food production, eco-tourism, sustainable finance solutions, climate-resilient infrastructure) • Premium pricing opportunities	• Loss of customers if decarbonisation expectations are unmet • Restricted market access due to regulations • Population trends affecting markets (depending on the trends, this could also be leveraged as an opportunity) • Climate impacts affecting production systems and yields
Bottom line	• Lower operating costs through energy/ waste/ water efficiency • Reduced potential of regulatory fines • Long-term risk mitigation, e.g. reduced exposure to operational and supply-chain disruption • Resilient physical assets resulting in reduced insurance costs	• Higher operating costs due to resource scarcity (water/ raw material inputs) • Carbon pricing and carbon border adjustment mechanisms (CBAM)[2] • Increased insurance costs for vulnerable assets • Inability to secure insurance, resulting in disaster-related costs that cannot be recovered
Asset values	• Higher valuation for green-certified assets (e.g. Green Star or NABERSNZ building certifications) • Stronger brand and reputation • Enhanced resilience of physical assets	• Stranded assets (e.g. fossil fuels, commodity processing plants) • Physical asset devaluation from climate risks
Terminal value	• Higher long-term growth assumptions due to climate-resilient business models • High growth assumptions from low-carbon innovation and access to the fast growing green economy • Lower discount rate (weighted average cost of capital) from reduced risk and better investor confidence	• Lower growth assumptions if climate risks constrain future operations • Higher discount rate if investors perceive tangible threats to the business model
Enterprise value	Impact of the above on valuation, plus: • Attracting climate action focused investors • Lower cost of capital • Higher valuation multiples for low-carbon, climate-resilient businesses	• Valuation discounts for poor climate action performance • Investor divestment • Litigation and reputational damage

[2] Carbon Border Adjustment Mechanism (CBAM) is a regulatory tool used to place a carbon charge on certain imported goods. It is designed to prevent "carbon leakage" by ensuring that imported products face a comparable carbon cost to those produced domestically, incentivising lower emissions production globally.

Applying a climate and nature lens to value analysis

In applying this lens to value analysis, organisations need to look across several different domains including:

- value at risk;
- value preservation; and
- value creation.

Each of these areas will present a range of possible interventions, so it is important to identify the scale of opportunity through quantification in order to build a robust case for change (see Figure 1 for an illustrative EBITDA-focused value bridge). Some interventions are relatively straightforward to quantify, and have clear paybacks (e.g. energy efficiency, climate grants, or tax relief). Others face a higher degree of uncertainty, for example investments in supply chain resilience, or addressing the chronic impacts of heat stress on product yields.

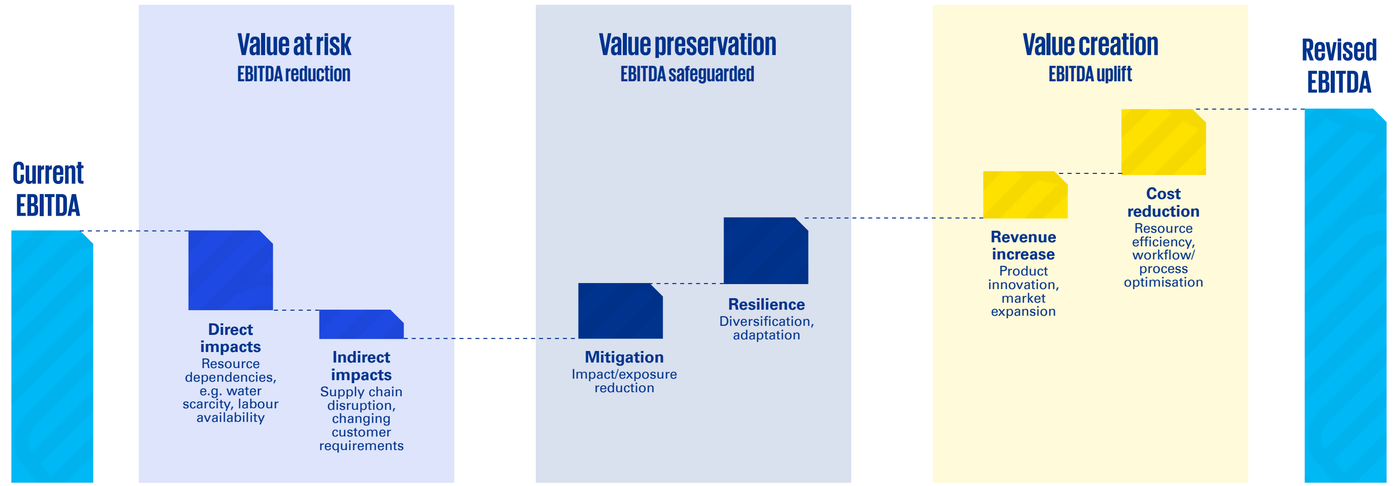
The analysis and quantification of these more uncertain, and often longer-term, risks and opportunities can be most revealing, as they generally require organisations to test and scrutinise underlying business model assumptions and the impacts on organisational value drivers. Directors should not shy away from confronting this complexity, given the key role they play leading an entity's purpose, goals and strategy, and providing long-term value (NZX Corporate Governance Code). It provides an opportunity to strike the balance between addressing short-term risks and opportunities and laying the groundwork for future growth and resilience.

Directors should ask:

- Which of our value drivers could be most affected by climate and nature-related issues?
- How might these value drivers be impacted, and under what conditions?
- What information is available to help us understand the financial quantum of potential impacts?
- What is the range of possible financial outcomes, and can we influence that range?
- What are our 'no regrets' options?

Illustrative sustainability value EBITDA* bridge

Figure 1



*Earnings before interest, tax, depreciation and amortisation

Ensuring financial statements show fair presentation

Investors and regulators need to understand how climate-related risks and opportunities have affected and will affect a company's financial position and performance. To achieve this, NZ GAAP (Generally Accepted Accounting Practice) requires entities to assess what impact, if any, climate risks, opportunities, and other uncertainties have on their financial statements.

There are two elements to this:

- **the accounting,** for example the impact on asset values, liabilities reported and on the revenues and expenses recognised; and
- **the disclosures,** for example assumptions, uncertainties, and significant judgments that underpin the amounts recognised in the financial statements.

KPMG's Global Corporate Reporting Institute provides guidance on how uncertain times may impact accounting and disclosures, and includes specific guidance to help organisations be clear on climate reporting.

There will be areas of connection between your organisation's financial statements and climate-related quantification, but also valid reasons for differences. However, financial quantification remains an important input to inform accounting and disclosures.

Directors are ultimately responsible for financial statements. Climate-related risks and other uncertainties can impact the key assumptions and estimates that underpin accounting treatments and financial statement disclosures.

Directors should:

- expect high standards and ensure that the people carrying out or managing those functions are capable, and doing so honestly and ethically;
- know the business and ask the hard questions; and
- have sufficient financial literacy to understand, monitor and guide the business of their company.

IoD NZ - The Four Pillars of Governance Best Practice - Section 4.6.2 Financial statements

Climate reporting expectations and materiality

Financial quantification of anticipated climate-related impacts is an increasingly important part of domestic climate reporting and international sustainability reporting practice. As reporting regimes and report readers grow in maturity, the expectation that report preparers go further than simply documenting climate-related risks and opportunities, to quantifying their relative magnitude is growing. Investors, regulators, and other report users also expect connectivity between a company's climate and sustainability reporting and its financial statements.

In extending the Aotearoa New Zealand Climate Standard (NZ CS) adoption provisions for anticipated financial impacts (AFIs), the External Reporting Board (XRB) has reiterated that *"the disclosure of AFIs is an integral component of the climate-related disclosure framework… the disclosure of the AFIs of climate-related risks and opportunities enables investors and stakeholders to assess how these factors may affect an entity's financial position, financial performance, and cash flows over time… these disclosures improve transparency, support informed decision making, and help demonstrate the credibility of an entity's strategy and transition planning."* [3]

Whether or not reporting entities choose to apply these adoption provisions, now is the time to act. Quantification is complicated and a robust quantification approach is a central requirement for credible reporting. The XRB's AFI guidance on framing internal conversations is a starting point to guide the journey and the New Zealand Society of Actuaries Climate Disclosure Working Group is developing a white paper to support organisations with the identification and quantification of AFIs.

Quantifying financial impacts is not just a requirement of the NZ CS. Organisations captured by reporting regimes in other jurisdictions (such as Australia, see Box 2) and those subject to growing value chain scrutiny, will also need to grapple with financial quantification. Voluntary reporters should also consider the benefit of quantification if they are seeking to build greater credibility in their disclosures. The reporting frameworks are designed to guide your approach, to enable you to understand the quantum of risks and opportunities, and to support more informed capital allocation decisions.

Box 2 Financial quantification disclosure requirements

New Zealand

Aotearoa New Zealand Climate Standards (NZ CS1, paragraph 15) requires the disclosure of:

- the anticipated financial impacts (AFIs) of climate-related risks and opportunities reasonably expected* by an entity;
- the time horizons over which these impacts could be reasonably expected to occur; and
- if the entity cannot disclose quantitative information, an explanation of why that is the case.

Entities should disclose the AFIs before their planned response to climate change is included.

* Reasonably expected does not equate to probable. e.g. if the hazard (e.g. drought) happens, what would the entity reasonably expect the impacts and their financial consequences to be? Refer Section 3.4 XRB Staff guidance AFIs - Framing internal conversations

Australia

Mandatory sustainability reporting in Australia commenced in 2026, starting with the largest entities and gradually phasing in smaller entities. The sustainability report must contain climate-related financial information required under the Corporations Act and the Australian Accounting Standards Board (AASB) S2 Climate-related disclosures standard.

Australian reporters have no adoption provisions for financial quantification, however their reporting requirements differ in that the Australian standards require disclosures of financial effects after planned response, aligned with International Financial Reporting Standards (IFRS) Foundation's S1 and S2 Standards.

For more information on the Australian regime see KPMG's Australian Sustainability Reporting Legislation and Standards Guide and for specifics on financial quantification under the Australian regime see the AASB's Disclosing information about anticipated financial effects.

[3] Amendments to Adoption of Aotearoa New Zealand Climate Standards 2025 (p.12)

Informing materiality

Quantification as a process also provides organisations with an improved understanding of which risks and opportunities are material as financial impact is a important component of materiality. From a climate reporting perspective, the quantification process should provide organisations with the confidence to state when a climate-related issue is not financially material, or that it doesn't meet their materiality threshold. Supporting executive teams with these decisions can also help to right-size a disclosure, optimise reporting cost, and lead to primary users valuing disclosures more highly.

However, while quantification focused on material risks should be a value-adding exercise, it is important that directors are aware of the growing evidence of the long-term financial impacts of climate and nature. Directors should ensure their organisation's quantification process is robust and grounded in the latest approaches to valuing externalities so that internal calculations match market perspectives.

Box 3

Practical application - Meridian Energy

Meridian Energy is a weather-driven business with long-life assets and strong internal modelling capability. They use climate-related disclosures as a decision-making tool, not a compliance exercise. Meridian's assessment of climate-related risks and opportunities is undertaken through a collaborative, enterprise-wide approach, bringing together business units, finance, and strategy teams. This integrated process focuses on identifying and assessing those climate-related risks and opportunities that could materially affect Meridian's long-term value.

In preparing its FY25 climate-related disclosures, Meridian revisited a previously disclosed transition risk relating to carbon price uncertainty. They reviewed their materiality approach, focusing on what is most important to Meridian's long-term value and the decision-usefulness of information for stakeholders. They engaged operational leaders and applied financial quantification, and the resulting assessment determined the risk as not material.

This analysis gave management and the board confidence to remove the risk from the FY25 disclosure, supported by clear documentation and explained in their disclosure Meridian Energy Climate-related Disclosures FY25 (p.20). Meridian's experience demonstrates how quantification can sharpen materiality judgements, reduce disclosure noise, and improve usefulness for investors, while ensuring climate analysis remains embedded in core strategic and capital allocation decisions.

"Quantification shouldn't be feared. The numbers don't create the risk, they reflect what already exists. Climate reporting is an iterative process, and organisations should feel confident refining their approach as understanding improves." Laurissa Cooney - Director

Box 4

Doing the work versus disclosure

Purpose and audience differ:

- Doing the work is about building a robust internal understanding of climate-related risks and opportunities to inform internal decision-making and strategy.
- Disclosure is about communicating relevant, material insights to external stakeholders (e.g. regulators, investors, and the public) often in a more summarised or standardised format to inform their decision-making.

Confidence and transparency:

- Being clear about uncertainties, assumptions, and data gaps is essential both internally and in external disclosure.
- A robust internal process builds confidence in disclosures and supports transparent communication with stakeholders.

Level of detail:

- Through doing the work you can assess what level of detail to share with different audiences. Your directors and management will need a different level of detail from what is required in public disclosures.

Materiality thresholds:

- Doing the work will help you to determine which risks or opportunities meet the threshold for external disclosure. It is appropriate to document when an issue is not financially material.

See prioritising your efforts **Page 18** for more on the benefits from an internal and external perspective.

"For investors, the value of quantified financial disclosures on climate change lies in understanding the underlying assumptions, how they influence management decision-making, and the potential resulting implications for company value." Katie Beith - Investor

It's complicated – tips to get started or mature

Connecting climate and nature-related risks and opportunities to an organisation's long-term value and the financial quantification of these risks and opportunities is new, complicated, and there are lots of different ways to do it. In comparison, traditional financial tools have a well-trodden path that has been followed for a long time (e.g. financial reporting, budgeting, forecasting, and scenario modelling based on limited key assumptions). Financial quantification of these risks and opportunities includes complexities such as multiple interconnected assumptions, of which we may have limited control, and which may be very difficult to predict. Climate and nature issues also require us to look at much longer-term time horizons (see Box 5 for a comparison of risk assessment approaches).

The first section of this guide should have helped you clarify your 'why'.

This section is designed to give you tips on 'how' to embark on or mature in your journey.

Box 5

Comparing conventional risk assessment with approaches focused on climate and nature risks

Traditional risks	Climate and nature risks
Traditional risk assessment	Scenario risk assessment
Often short-term – up to 5 years	Longer-term – to 2050 and beyond
Limited complexity and relatively predictable outcomes	Interconnected and uncertain
Likelihood/impact	Hazard/exposure/vulnerability
Probable forecast	Reasonably expected* scenario range

* Refer to Box 2 on Page 8 for more information on what is meant by 'reasonably expected'.

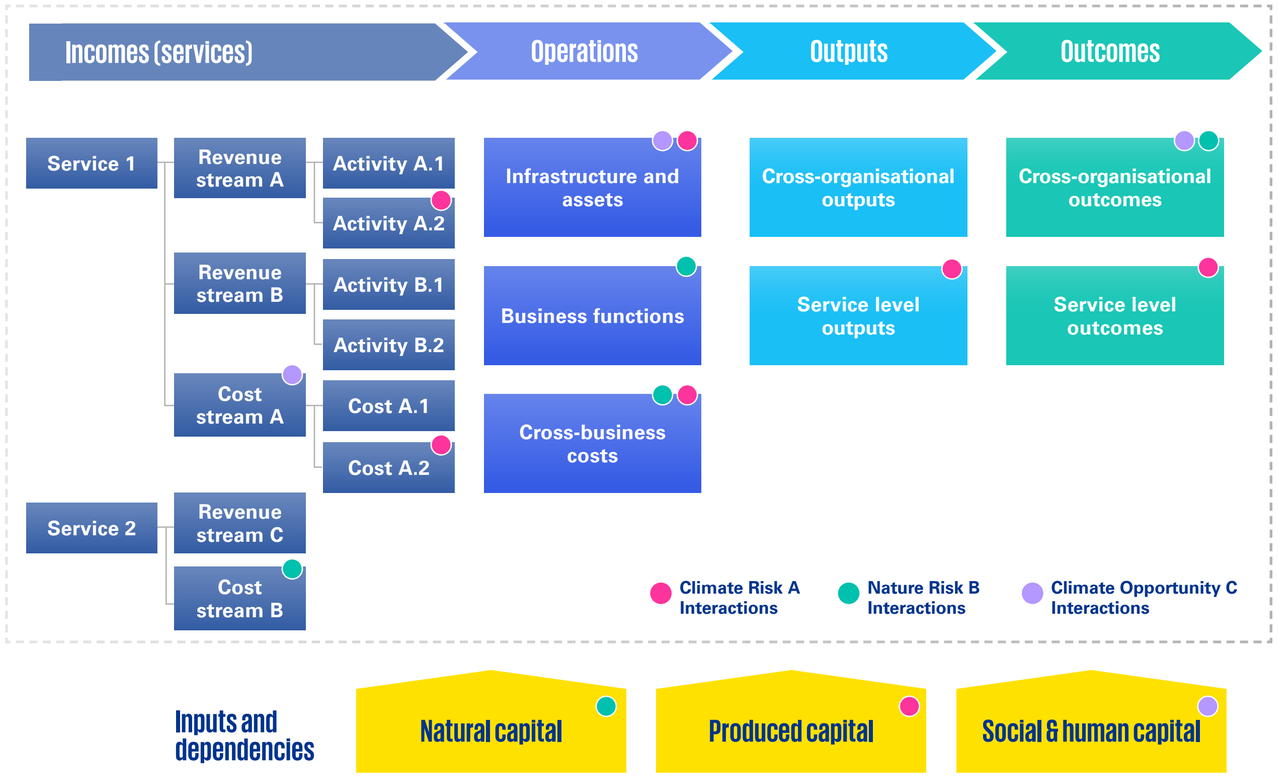
"Boards have to think differently — it's no longer business as usual. The conversation has become more thoughtful and focused on future uncertainty, taking all available information into account. This means looking not just at incident costs, but also the chronic impacts on operating costs, challenging underlying business model assumptions." Hannah Hamling - Director

Start with what is available and build on it

Developing your approach is a gradual process that evolves with organisational maturity. A good starting point is the information you already have on your organisation's key value drivers, its income and cost streams, outputs and dependencies. Understanding this organisational value system (see for example Figure 2) and overlaying your identified climate and nature risks and opportunities will provide an initial logic map on which you can build out your quantification approach, characterise key points of interaction (for example, do the risks increase or decrease revenue generation; do the opportunities create new cost burdens?), and test key business assumptions.

Example organisational value system

Figure 2



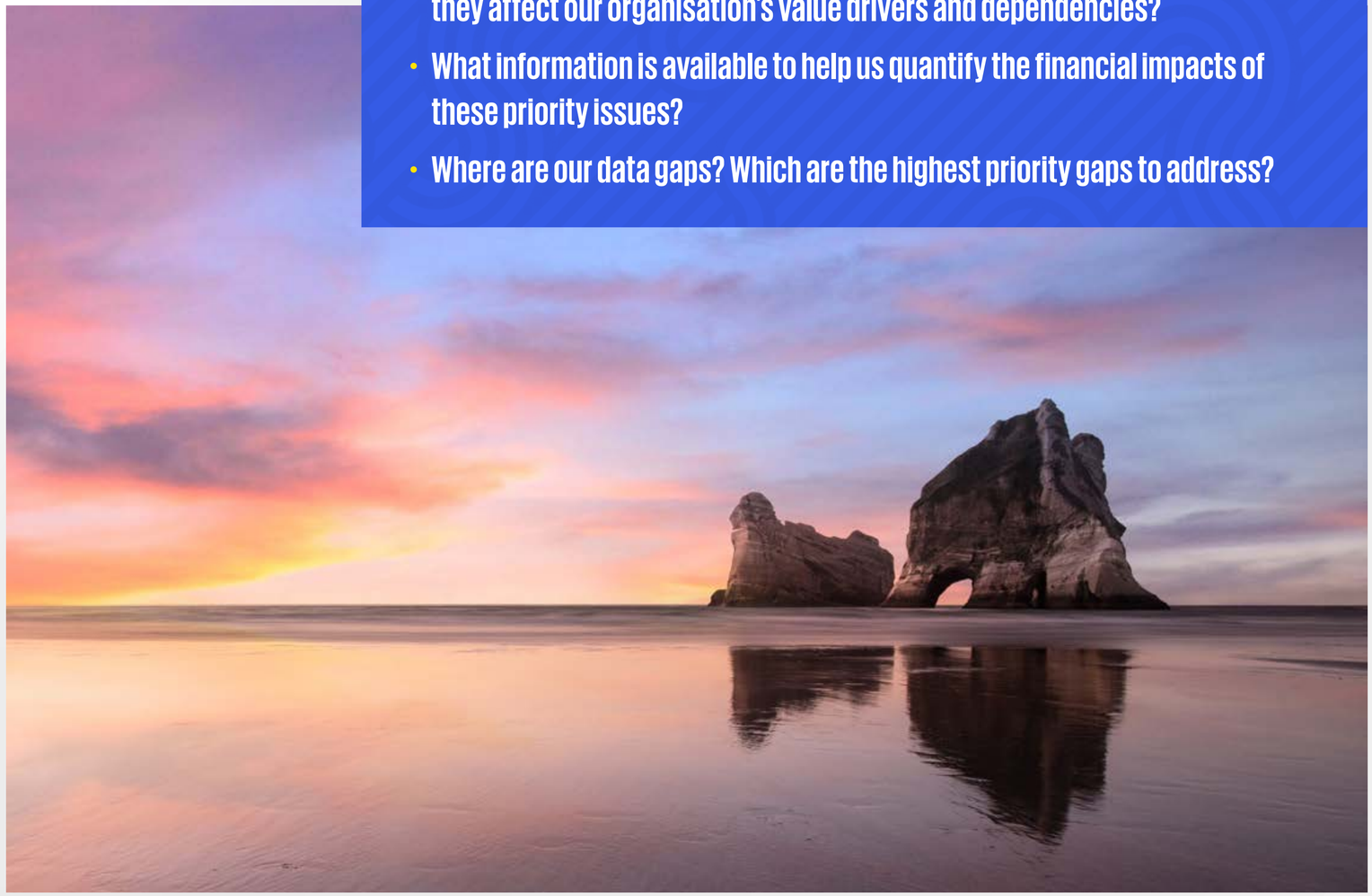
Early engagement of key stakeholders can help to inform this initial picture of climate and nature-related financial impacts and identify blind-spots that might change your assumptions or the figures that will underpin your calculations. This value-impact mapping can also help build out a financially credible transition plan. It is important to recognise that you won't have all the answers straight away, but this work provides a solid base to refine over time.

As this work is new, it is expected that the board will be more actively involved in monitoring progress and providing support and encouragement, before settling into a similar cadence to existing governance processes over time.

Data availability is a common challenge. In today's data-rich world, organisations are inundated with data, yet the real challenge lies in accessing the right information, in the right format, and at the right time to drive meaningful decisions. It is important to understand your data limitations and prioritise the biggest impact areas that will improve your approach. Financial quantification is not a set and forget process; it will require you to regularly test your assumptions across multiple scenarios, see uncertainty Page 16, and refine your assessment based on evolving information and market perceptions, see materiality Page 9.

Directors should ask:

- Are we clear on our most material climate and nature-related issues and how they affect our organisation's value drivers and dependencies?
- What information is available to help us quantify the financial impacts of these priority issues?
- Where are our data gaps? Which are the highest priority gaps to address?



Don't do it alone

Financial implications of climate and nature risks will extend beyond individual businesses, affecting customers, suppliers, competitors, and the broader economy. As outlined in The Treasury and Ministry for the Environment's Ngā Kōrero Āhuarangi Me Te Ōhanga: Climate Economic and Fiscal Assessment 2023: *"The economic and fiscal impacts of climate change are expected to be large, wide-ranging and unevenly felt."* Collaborative quantification efforts across sectors, supply chains, and regions can address shared challenges, build collective momentum, and foster a sustainable, resilient, climate- and nature-positive net zero Aotearoa New Zealand.

The WEF's Guiding Principles for Climate and Nature Governance recommends that *"the board oversees collaboration with stakeholders to strengthen resilience and inform decisions. It guides engagement with regulators, investors, industry and communities to build shared solutions and enhance preparedness for climate and nature challenges"*.

Leaning into collaboration opportunities can bring significant benefits both in terms of efficiencies and access to expertise. This, however, will only get you part of the way; like sector-wide scenarios, organisations will still need to tailor this work to their specific circumstances, business models, and strategies.

Alongside collaboration, engaging external advisors can be used to support and upskill internal teams. External advisors can be costly, so their use should be targeted and complemented by building internal capability and capacity over time.

"...climate leadership can be challenging, particularly when it is a new area for many... people are invariably happy to talk about their journeys and share both what worked well and less so. Plus it is always comforting to know that you are not alone on the journey, with the added advantage of not having to start from scratch." David Carter - Director, Lessons from the front line.

Box 6

Examples of collaboration efforts:

- Sector-level climate and nature scenario analysis
- Catchment-level nature risk assessments and management plans, such as Marlborough District Council catchment care projects
- The Reserve Bank of New Zealand's climate stress testing analysis

Align with existing systems and processes

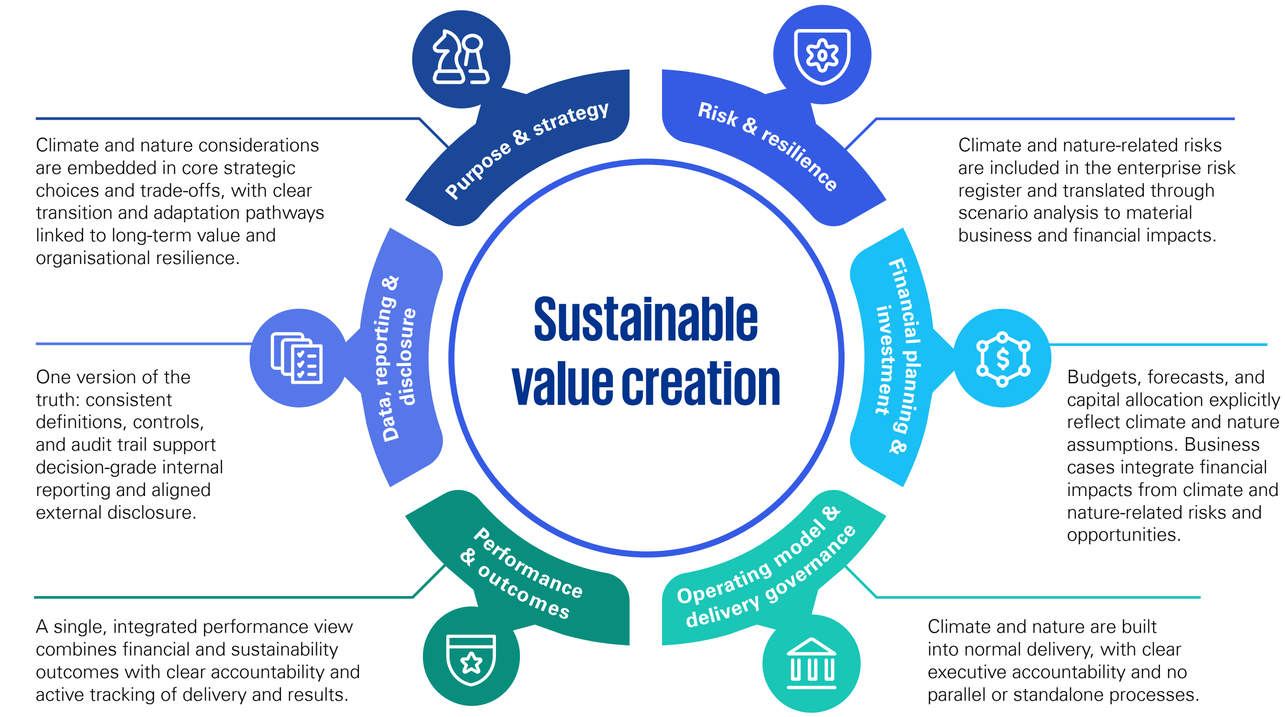
Boards and senior leadership already rely on robust governance systems to ensure financial integrity and enable informed decision-making. These systems typically include clear accountability structures, standardised reporting processes, rigorous internal controls, and integration with enterprise risk management. Applying the same discipline to climate and nature risks is key to achieving an integrated approach.

Why alignment matters

Financial planning, monitoring, and reporting are typically led by finance teams, while the assessment and management of climate and nature risks and opportunities often operate as a separate process with different datasets, assumptions, and controls. This separation creates a challenge for boards seeking to understand the financial implications of these risks and opportunities. To enable robust financial quantification, these processes must become connected and ultimately integrated (see Figure 3). This requires financial planning to evolve to cover new risk dimensions and engage individuals with broader skill sets, ensuring that resilience is embedded in financial systems and decision-making at every level.

What an integrated approach looks like

Figure 3



When sustainability and finance teams work hand-in-hand, organisations move beyond compliance toward strategic advantage, by integrating long-term resilience and sustainability into the core of financial decision-making.

Understand uncertainty, vulnerabilities and ‘no regrets’ actions

While there is growing evidence of the financial impacts of some climate and nature-related risks and opportunities (especially in the short-term), as organisations look to the medium to long-term, or at critical uncertainties like policy direction or complex chronic physical effects, uncertainty increases (see Figure 4). These impacts may not meet the test of being ‘probable’ (see Box 2 Page 8), however, good governance involves exploring what a potential combination of changes might mean for the validity of an organisation’s business model. Exploring the financial effects of key assumptions involves asking questions such as: If this happens, how might it affect me? Am I vulnerable to this change?

The board’s role here is to challenge the assumptions and ensure that they have a good view on the plausible pathways, the parameters used, and the connectivity to the organisation’s business model and long-term value. Scenario analysis is increasingly recognised as a key strategic tool for boards, not just for climate reporting purposes, but to help navigate the complex and uncertain world in which we are operating.

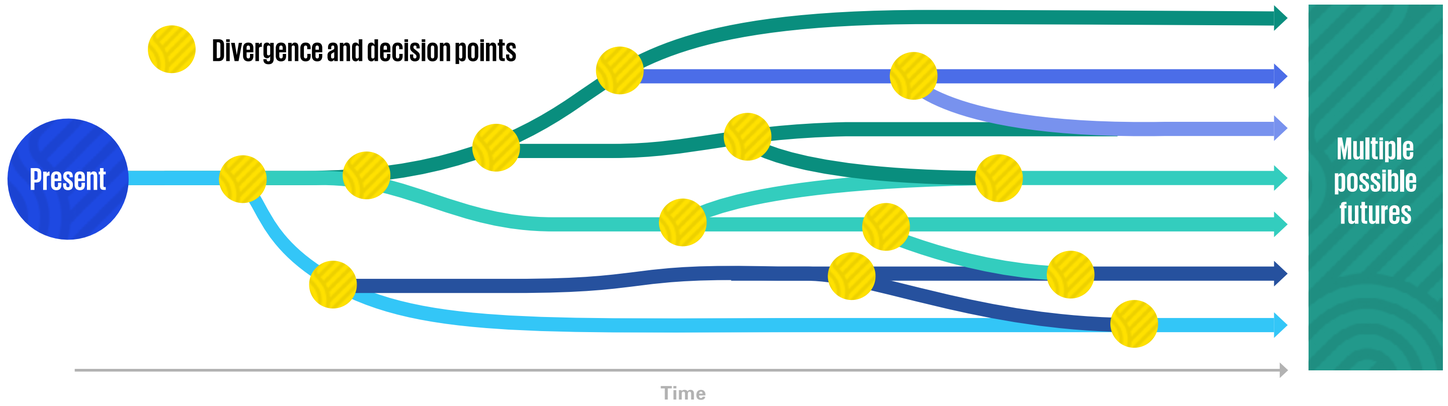
Looking at scenarios of how the future might play out can help boards to categorise potential interventions into groups such as ‘no regrets actions’, ‘real options’ that provide longer-term adaptability, and ‘big bet’ decisions the organisation could make to maximise upside or mitigate downside risk.

Directors should ask:

- Are our systems designed to support dynamic, forward-looking information? Are our models robust?
- Are we regularly reviewing our assumptions?
- Do we have a roadmap for improving our capability year-on-year?
- Are we taking an integrated approach to managing uncertainty across strategy, risk and capital allocation?

Figure 4

Longer time horizons create more pathways and greater uncertainty



Finance teams can use a range of analytical techniques (see Table 2) including scenario analysis, Monte Carlo simulation, and sensitivity analysis, to explore how shifts in value drivers like carbon pricing, material costs, production delays, or natural resource dependencies (e.g. water) could impact the financial position and performance of the entity. These methods generate valuable data to test and refine your existing business model, build resilience, and enhance strategic adaptability.

Examples of analytical techniques and their uses

Table 2

Tool/ technique	Typical use cases
Scenario analysis Evaluate financial impacts under different plausible future states by varying key assumptions (policy, technology, market, physical hazard).	Explore the effects of different climate policy pathways or extreme weather and chronic hazard trajectories, on business model resilience and/or to meet regulatory reporting frameworks.
Stress testing Assess resilience of portfolios or balance sheets under extreme but plausible adverse conditions. Often aligned to supervisory expectations.	Test the impact of key events such as severe flood, heatwave, or wildfire events, abrupt carbon price shocks, supply-chain disruptions, or liquidity and credit risk knock-ons.
Monte Carlo simulation Use repeated random sampling to model distributions of outcomes, capturing uncertainty and correlations among variables.	Estimate specific uncertainties such as carbon pricing impacts, supply chain disruption analysis or water resource planning.
Sensitivity analysis Test how changes in one or more inputs affect outputs. Highlights key value drivers and material assumptions.	Test the impact of specific parameters such as carbon price, fuel costs, demand shifts, discount rates, or hazard intensity. Support the prioritisation of data collection on most material parameters and focus management attention.
Heat mapping Rank exposures across geographies, business units, assets, or value drivers to focus subsequent quantification.	Identify vulnerability hotspots to prioritise deep-dive modelling and/or to triage a portfolio before allocating further analytical resources. This can be used at the scoping stage, and also as a visual for presentation of the scale of impacts across locations, business units etc.

Prioritise your efforts

The more organisations invest in their processes to connect enterprise value with climate and nature-related risks and opportunities, and embed this work as part of their routine financial management, the more they will get out. Directors can benefit from the process in multiple ways:

- **From an internal perspective,** developing a robust process can help illuminate critical data gaps and key business assumptions. Quantification can help to prioritise investment for capital allocation decisions and climate responses by establishing the scale of value creation or value preservation opportunities. Having comparable, robust, quantitative data can inform strategic decision-making more effectively than qualitative information.
- **From an external perspective,** connecting climate and nature to value will help to pre-emptively answer increasingly sophisticated questions from stakeholders about the organisation's response to these risks and opportunities. In a recent study of private equity financial performance, it was noted that *"increasingly, both strategic acquirers and financial sponsors view ESG[4] maturity as a proxy for business quality. It signals operational discipline, future-oriented leadership, and alignment with secular trends. For buyers assessing relevance and durability over time, a credible and proven ESG strategy enhances confidence in both the company and its future trajectory."*

Nonetheless, while outputs from the quantification process, and the allocation of resources, data, and time to the exercise offer clear advantages, it is important to recognise that the inherent uncertainty of the exercise means that care should be applied to ensure these efforts do not escalate into activities that diminish value or pursue an unrealistic level of precision.

Directors should ensure that organisations focus their quantification efforts only on their most material risks, the opportunities that have a clear link to value, and those aspects that drive strategic decision-making and capital allocation decisions.

Directors should ask:

- What information do we need to adequately govern our organisation and fulfil our director's duties? Do we have this?
- How confident are we in the current assessment of value at risk?
- Is the organisation focusing quantification efforts in the right places?
- Have we engaged a wide enough range of perspectives to uncover all major risks and potentially uncover 'out of the box' solutions?
- Are we revisiting priorities as assumptions, data and external conditions evolve?

[4] ESG – Environmental, Social and Governance

Call to action

Quantifying the financial impacts of climate and nature-related risks and opportunities is complex and requires organisations to confront a range of inherent uncertainties and assumptions. However, the benefits of doing so go far beyond meeting compliance and reporting requirements, particularly as these requirements shift, and as growth aspirations and organisational resilience are being increasingly challenged by domestic and international operating contexts.

By prioritising work on financial quantification, leveraging what is available, building on existing systems, and embracing opportunities for collaboration, you can start to truly understand the financial impacts of climate and nature-related risks and opportunities for your business, and use these insights in strategic decision-making.

Boards play a critical role in setting the tone, resourcing the work, and ensuring that disclosed plans are followed through. As practice matures, so too will the expectations and the opportunity to demonstrate leadership, resilience, and value creation.

The board should ensure that climate and nature systematically inform strategic investment planning and decision-making processes, and are embedded into the management of risk and opportunities across the organisation.

Directors should ensure that:

- Financial quantification is used to inform strategy, capital allocation and risk oversight – not just treated as a reporting exercise.
- Management effort is focused on the most material risks and opportunities rather than exhaustive precision.
- Assumptions, uncertainties, and trade-offs are surfaced, tested, and reviewed over time.
- Progress is monitored as part of the board's ongoing governance cadence.

Other useful resources to support you and your people

Reporting Guidance

Sustainability reporting: A guide for boards and leadership | KPMG and Chapter Zero NZ

Climate-related disclosures staff guidance | XRB

Illustrative disclosures - IFRS sustainability disclosure standards | KPMG

Materiality for sustainability reporting | KPMG

Disclosing information about anticipated financial effects applying ISSB standards | IFRS Sustainability

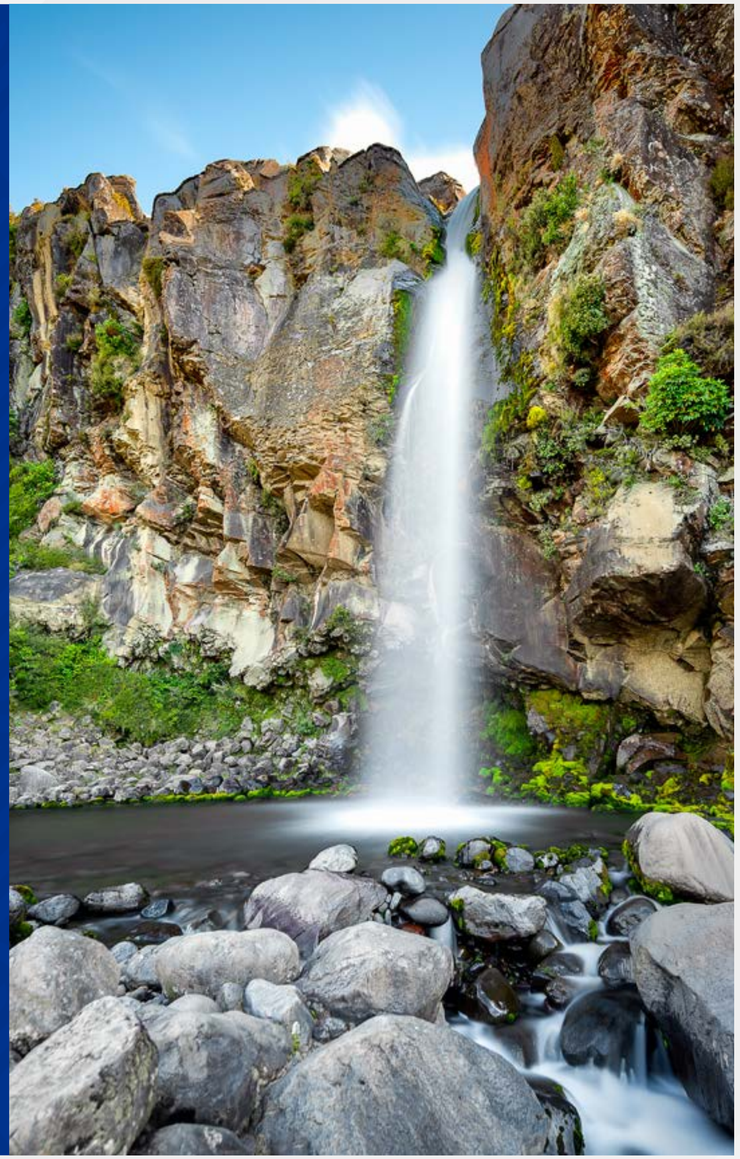
Illustrative examples of disclosures about uncertainties in the financial statements | XRB/IASB

Other Chapter Zero NZ Resources

Climate Change Science Snapshot

Transition planning – a guide for directors

Climate scenario analysis



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Chapter Zero New Zealand is the national chapter of the Chapter Zero Alliance, proudly hosted in Aotearoa New Zealand by the Institute of Directors. It is part of a global network of directors committed to strengthening board leadership on climate change and nature-related risks and opportunities by enhancing their knowledge and skills in climate and nature governance.

The mission of Chapter Zero New Zealand is to support a sustainable, resilient, climate- and nature-positive net zero economy, thereby creating long term value for both shareholders and stakeholders.