

Sustainability Disclosures in the Blue Economy

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**Report for Sustainable Seas National Science Challenges Project
BE 1: Sustainability Disclosures and BE 2: Applying BE Principles
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About Sustainable Seas Challenge

Our vision is for Aotearoa New Zealand to have healthy marine ecosystems that provide value for all New Zealanders. We have 60+ research projects that bring together around 250 scientists, social scientists, economists, and experts in mātauranga Māori and policy from across Aotearoa New Zealand. We are one of 11 National Science Challenges, funded by Ministry of Business, Innovation & Employment.

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Glossary

Blue Economy refers to marine activities that generate economic value and contribute positively to social, cultural, and ecological well-being.

ESG Reporting is a communication tool, specifically a sustainability reporting tool, published by an organisation or company about their environmental, social and governance impacts.

Kaitiakitanga is refers to guardianship and protection, a person or organisation/entity can be a kaitiaki or guardian of a place.¹ Kaitiakitanga recognises the idea that humans are a part of the natural world and people are closely connected to the land and nature.

Manaakitanga is a value in te ao Māori referring to the expressing kindness and respect for others, emphasising responsibility and reciprocity.² It also can be expressed through the responsibility to provide hospitality and protection.³

Metrics are a standard of measurement, based on indicators and assessment criteria, and are used in sustainability standards to measure progress towards sustainability goals.

Science-based Targets helps organisations to define best practice emissions reductions and net-zero targets, in line with the latest climate science. Additionally, the Science-based Targets initiative independently validates assessments and provides technical assistance.

Sustainability Standards are usually voluntary frameworks used by organisations to demonstrate commitment to environmental, social, and governance values.

Te ao Māori (the Māori worldview) is a holistic approach seeking to understand the whole system. It acknowledges the interconnectedness and interrelationship of all living and non-living things.⁴

Whakapapa can be defined as genealogy and includes a sense of respect for ancestors and acknowledges the linkages between living and non-living things.⁵ Furthermore, it denotes the family connections to place and between whānau, hapū and iwi.⁶

Value-creation can be defined as the economic value created through an activity. This can be either direct or indirect.

¹ <https://teara.govt.nz/en/kaitiakitanga-guardianship-and-conservation>

² <https://arataiohi.org.nz/mana-taiohi-principle/manaakitanga/>

³ <https://www.imsb.maori.nz/maori-wellbeing-in-tamaki-makaurau/manaakitanga/>

⁴ [https://ourlandandwater.nz/about-us/te-ao-maori/#:-:text=non%2Dliving%20things-,The%20M%C4%81ori%20world%20view%20\(te%20ao%20M%C4%81ori\)%20acknowledges%20the%20interconnectedness,Our%20Land%20and%20Water%20Challenge.](https://ourlandandwater.nz/about-us/te-ao-maori/#:-:text=non%2Dliving%20things-,The%20M%C4%81ori%20world%20view%20(te%20ao%20M%C4%81ori)%20acknowledges%20the%20interconnectedness,Our%20Land%20and%20Water%20Challenge.)

⁵ <https://teara.govt.nz/en/whakapapa-genealogy/page-1>

⁶ <https://www.landcareresearch.co.nz/discover-our-research/land/soil-and-ecosystem-health/soil-health-and-resilience/kaupapa-maori/key-maori-principles/>

Acronyms

ASX	Australian Stock Exchange
BE	Blue Economy
CDSB	Climate Disclosure Standards Board
CSR	Corporate Social Responsibility
EBM	Ecosystem-Based Management
EFRAG	European Financial Reporting Advisory Group
ESG	Environmental, Social and Governance
ESRS	European sustainability Reporting Standards
FASB	Financial Accounting Standards Board
FSB	Financial Stability Board
GRI	Global Reporting Initiative
IFRS	International Financial Reporting Standards
IIRC	International Integrated Reporting Council
IMO	International Maritime Organisation
IR	Integrated Reporting
ISSB	International Sustainability Standards Board
MSP	Marine Spatial Planning
NCA	Natural Capital Accounting
NZX	New Zealand Stock Exchange
SASB	Sustainability Accounting Standards Board
TCFD	Task Force on Climate-related Financial Disclosures
TNFD	Task Force on Nature-related Financial Disclosures
VRF	Value Reporting Framework
XRB	External Reporting Board

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Executive summary

“The development of nature risks methodology will be key to unlocking better understanding, analysis, and action around nature-related risks for companies and investors.

Future developments of the methodology aim to increase focus on impacts on Indigenous Peoples and Local Communities, as well as expanding to cover freshwater and marine realms.”

- Dr Richard Mattison, President of S&P Global Sustainable1 – Davos, 2023

This report provides a stocktake of sustainability disclosure practices and initiatives globally and in Aotearoa New Zealand. The report discusses the current international sustainability disclosure frameworks and provides an overview of key developments. It also covers developments in the blue economy space by providing insights into disclosure practices in selected marine sectors. The research presents an opportunity for furthering Sustainable Seas National Science Challenge’s (the Challenge) knowledge by applying it in blue economy organisations.

This report establishes a knowledge base and state of play (trends, drivers, and practice) related to considering nature and ecosystems in blue economy sectors and the related finance and insurance sectors. It is envisaged that disclosure and value creation of New Zealand’s marine sectors (‘real’ and financial) will be supported by applying the Challenge’s learnings and insights on ecosystem-based management (EBM).

The intended audience for this report is government ministries involved in managing marine sector industry activities, marine sector entities, and stakeholders interested in sustainability disclosures for the marine environment. This report is a stocktake, with a view to factoring marine ecosystems and socio-cultural values through new measurement and reporting initiatives (e.g. Taskforce on Climate-related Financial Disclosures, Ocean Accounting etc). The definition for the blue economy, used throughout this report, is provided by Sustainable Seas, which defines a blue economy as [“marine activities that generate economic value and contribute positively to social, cultural, and ecological well-being”](#).

Scope of the report and methodology

This report reviewed a range of grey, policy, and academic literature for this work. It sought input from a range of stakeholders and knowledge holders from research institutes, finance, marine organisations, and regional government. The development of this report is based upon:

- A desktop review of twelve sustainability disclosure practices, standards, and frameworks, ranging from international (six) and national (six) scales.
- A review of sustainability disclosures in the blue economy was also undertaken, with a focus on Aotearoa New Zealand.
- Four descriptions of New Zealand organisations operating in the blue economy.
- Nine interviews with knowledge holders and sustainability practitioners.
- Analysis of sustainability disclosures for blue economy sectors and;

- A set of conclusions and recommendations on leveraging biodiversity and climate agendas for the blue economy.

Insights

- **Sustainability disclosure standards are converging.** The merging of standards of practice to form a new standard has begun in the international sustainability disclosures space. This convergence of sustainability disclosures will ultimately drive more consistent and comparable reporting. Double materiality (i.e. financial and impact materiality) of reporting is an important consideration. Double materiality⁷ refers to financial and impact materiality, where financial materiality refers to the organisation's financial performance and impact materiality refers to the external impacts an organisation has e.g. environmental and on communities.
- **Biodiversity, and other nature-related financial disclosures are likely to be required in future.** In alignment with the both the Taskforce on Climate-related Financial Disclosures (TCFD) and the Taskforce on Nature-related Financial Disclosures (TNFD).
- **The TCFD and TNFD recommend entities assess the risks and opportunities that climate and nature present for their business.** A joint assessment encourages more holistic approaches to climate and nature related financial disclosures.
- **For those adopting sustainability reporting, the Global Reporting Initiative (GRI) standards have been the norm in New Zealand.** This may change with the ISSB Standards, which includes a requirement for Integrated Reporting which many companies in New Zealand already use.
- **Māori owned enterprises tend to embody the values underpinning sustainability reporting, as te ao Māori inform business/organisational values.** This gives Māori owned enterprises an advantage for sustainability reporting, as the entities are often already aligned with sustainability disclosure reporting metrics.
- **Aotearoa New Zealand was an early mover in adopting TCFD recommendations with the introduction of the Climate-related Disclosures Act, which was enacted in 2021.** However, Aotearoa New Zealand lacks a presence in other relevant initiatives (e.g., UNEP FI Blue Economy), which could support blue economy development. Adopting and piloting a disclosures project for the TNFD could be a prime opportunity to leverage biodiversity and climate agendas, understand how te ao Māori (the Māori worldview) adds value, and showcase Māori-owned enterprise experience and knowledge.

Suggested next steps: Increasing readiness for nature-based disclosure through a pilot experiment in Aotearoa blue economy

This stocktake suggests Aotearoa New Zealand could benefit from the development and adoption of Aotearoa-centric blue economy principles to underpin blue economy disclosure. A blue economy nature-related disclosures pilot with a selection of interested blue economy entities could support the development of practice, generate learnings, and contribute an

⁷ See GRI's whitepaper on double materiality for more information <https://www.globalreporting.org/media/jrbntbyv/griwhitepaper-publications.pdf>

Aotearoa New Zealand perspective to the body of global knowledge regarding integration of nature in business and investment decisions.

Introduction

Sustainability disclosures are a broad set of communication tools for organisations to convey their sustainability factors to customers, investors, and other stakeholders. This can range from sustainability reporting, sustainable product labelling, such as Fair Trade or Marine Stewardship Council, to accreditation schemes, such as Toitū or B-Corp certification (Meech and Bayliss, 2021). Sustainability reporting in particular communicates how an organisation is performing against economic, environmental, social and governance metrics. Increasingly, investors, regulators, and other stakeholders are interested in understanding the impacts and dependencies of a business on the environment, and vice versa, ranging from carbon emissions to nature-related impacts.

A broadly accepted blue economy has yet to be established. For the purposes of this report, the Sustainable Seas National Science Challenge definition of the blue economy as “[*marine activities that generate economic value and contribute positively to social, cultural, and ecological well-being*](#)” is used. The blue economy includes multiple sectors such as shipping, fisheries, aquaculture, offshore oil and gas, and coastal and marine tourism (from cruise ships to local coastal tourism operations).⁸

Sustainability disclosure and reporting varies by sector, including in the blue economy. No standards or frameworks explicitly include the blue economy perspective; however, standards and frameworks are utilised in blue economy sectors. Given the blue economy does not have a standard reporting framework, it is necessary to understand the history of sustainability disclosures and the existing reporting frameworks which the blue economy sectors use.

This report examines sustainability disclosures in Aotearoa’s blue economy – reviewing the current state of play through grey and academic literature, with international and local examples for context. It gives a snapshot of sustainability disclosures, with a focus on nature-related reporting and the blue economy in Aotearoa New Zealand, preparing the way for further work in this area. The report discusses the current international sustainability disclosure frameworks and provides an overview of key developments. It also covers developments in the blue economy space by providing insights into disclosure practices in selected marine sectors. This report establishes a knowledge base and state of play (trends, drivers, and practice) related to considering nature and ecosystems in blue economy sectors and the related finance and insurance sectors.

The research presents an opportunity for furthering Sustainable Seas National Science Challenge’s (the Challenge) knowledge by applying it in blue economy organisations. It is envisaged that disclosure and value creation of New Zealand’s marine sectors (‘real’ and financial) will be supported by applying the Challenge’s learnings and insights on ecosystem-based management (EBM). This report is a stocktake, with a view to factoring marine ecosystems and socio-cultural values through new measurement and reporting initiatives (e.g. Taskforce on Climate-related Financial Disclosures, Ocean Accounting etc).

⁸ For more information on the blue economy and the principles that underpin the concept, see the *‘Developing blue economy Principles for Aotearoa New Zealand’* report.

Sustainability Disclosures: What is it and what is ESG?

Global trends on sustainability reporting show an increased uptake of disclosure practices ranging from Environmental, Social, and Governance (ESG) reporting to the Taskforce on Climate-related Financial Disclosures (TCFD) and the Taskforce on Nature-related Financial Disclosures (TNFD). Both the TCFD and TNFD are designed to increase transparency in disclosure, based around core themes. The TCFD focuses on climate, while the TNFD focuses on nature (i.e., biodiversity). Uptake and understanding of the concepts for climate-related reporting are now standard practice for companies and report preparers. However, reporting on nature-related issues, including biodiversity, can include unfamiliar concepts for report preparers, potentially impeding the uptake of these new concepts. New Zealand currently exceeds its 'fair share' of planetary boundaries,⁹ in the five out of nine boundaries from both production and consumption perspectives (Stockholm Resilience Centre, 2020).¹⁰ For sectors of the blue economy, reporting on biodiversity and other nature-related issues is imperative to minimize risks and exposures for business, as well as reducing impacts on nature.

Alongside environmental and governance factors, reporting on social sustainability has expanded in recent years. Just as climate change has triggered legislative requirements in several jurisdictions, this is also the case with respect to social sustainability. Extreme abuses such as modern slavery, for example, have led to some large entities being required to report on the risks of modern slavery in their supply chains and operations and actions taken to mitigate these risks (Meech & Bayliss, 2021). Aotearoa New Zealand is exploring the implementation of similar modern slavery legislation (MBIE, 2022).

In these and other ways sustainability reporting is expanding. On the one hand, it is becoming progressively perceived as a responsible practice; and on the other hand it is being folded into state policy positions and legislative change. The risk of litigation can be higher if organisations fail to measure and report on sustainability dimensions (such as ESG factors). For example, human trafficking lawsuits are growing internationally (Nicolson et al., 2020).

⁹ The Planetary Boundaries Framework outlines what a "safe operating space" for intergenerational sustainability would look like, and helps nations align to the United Nations Sustainable Development Goals (UN SDGs) (Stockholm Resilience Centre, 2020).

¹⁰ 'Fair share' is defined as "a nation's allocation is based on the size of the population compared with the global population" (p. 5, Stockholm Resilience Centre, 2020).

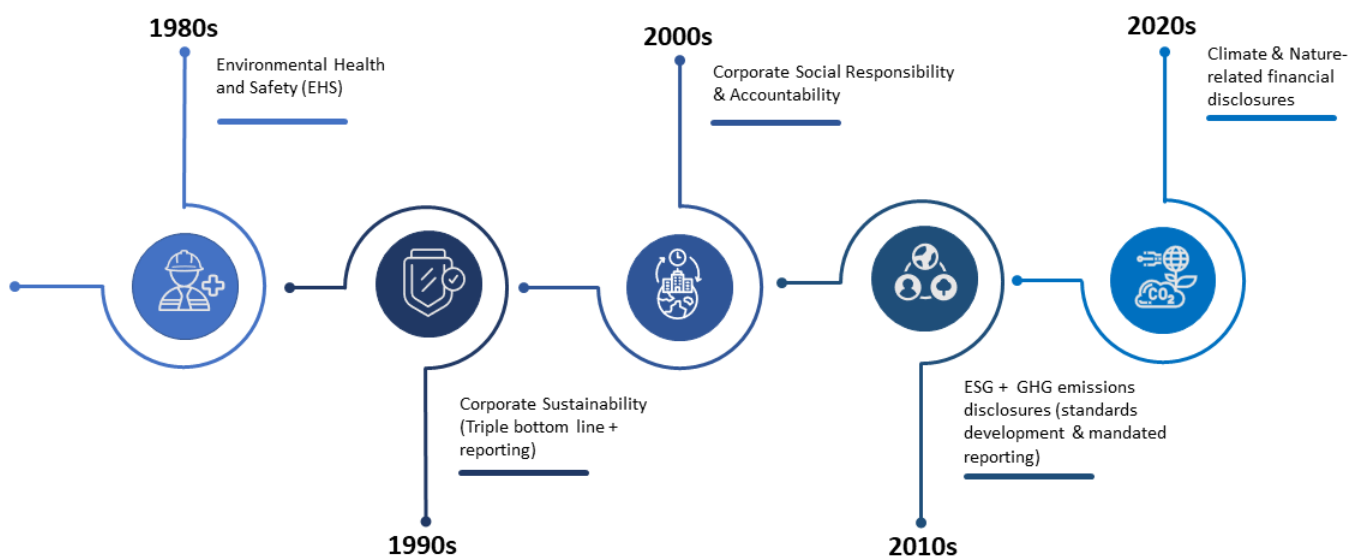


Figure 1: Timeline of sustainability disclosures from the 1980s to the present. Produced by EnviroStrat Limited.

Sustainability reporting communicates and measures performance against environmental, social, and corporate governance (ESG) criteria (Meech and Bayliss, 2021). It usually discloses the organisations’ governance model and values, demonstrating the relationship between the organisation’s strategy and commitment to a sustainable global economy. The objective is to assist entities in measuring, understanding, and communicating their environmental, economic, social and governance performance, enabling the organisations to set targets, and manage change effectively (GRI, 2020). Sustainability reports will usually include both quantitative and qualitative measures of sustainability performance (Covington, 2019). How entities present this information varies from a webpage on corporate sustainability, to a standalone sustainability report to integrated reporting where organisational, operational, financial, and sustainability performance are integrated and communicated.

ESG is broadly defined as a framework for communicating to stakeholders how an organisation manages ESG-related risks and opportunities (Peterdy, 2022). The ESG agenda has evolved over the past two decades (fig. 1; Peterdy, 2022):

- The corporate sustainability movement in the 1990s led to environmental impact reporting emerging, as companies focused on reducing impacts.
- By the 2000s, Corporate Social Responsibility (CSR) emerged, integrating ideas on how organisations respond to social issues. Corporate philanthropy was the principal expression of this, although critics argue tax incentives motivated cash donations.
- By the late 2010s to 2020s, as sustainability market incentives approaches such as ecolabels gained momentum and the risks of unsustainable practices became more explicit, ESG emerged as a proactive movement with rapid changes in reporting requirements and the ability to be credibly transparent. A shift towards (standards) convergence and increased regulatory focus on ESG-related disclosures emerged. More companies than ever undertake sustainability disclosures and reporting.

The establishment of the International Sustainability Standards Board (ISSB) in 2021 and the work of the New Zealand External Reporting Board (XRB) in this space suggests that

sustainability reporting will only become more prominent, standardised, and increasingly mandatory. New Zealand is an early adopter in enshrining climate risk reporting into law through the passing of Māori-owned enterprises and Sustainability Disclosures

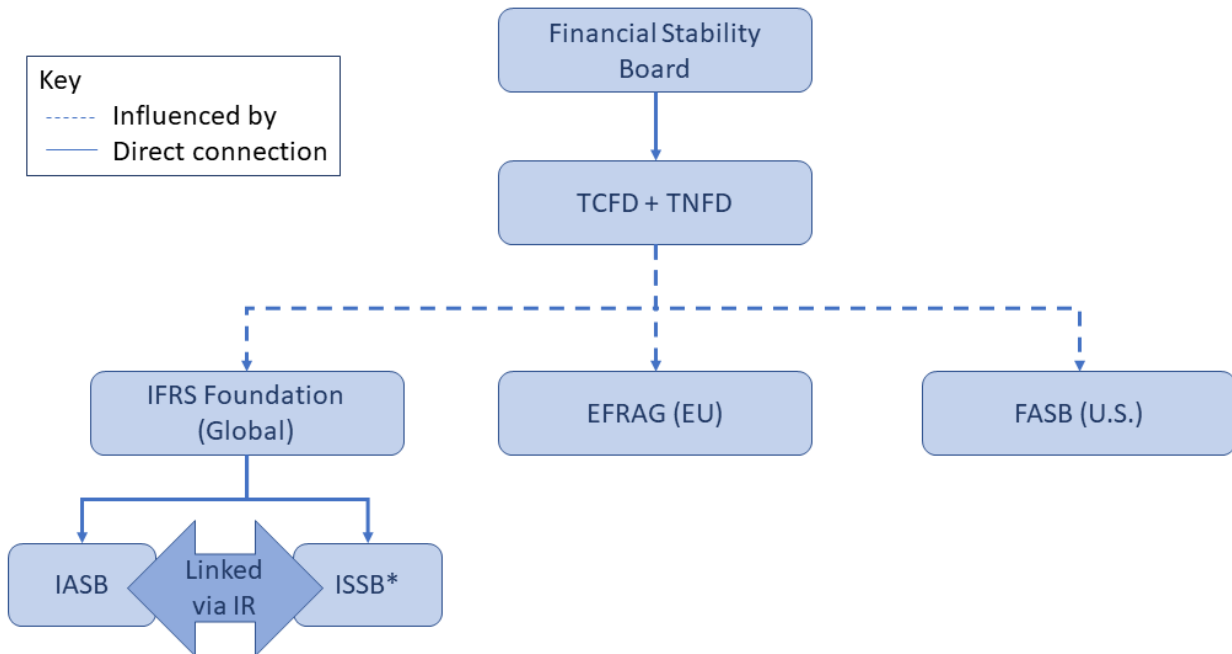
Kaitiaki-centered business models embody commercial and social activity within sustainable ecosystem processes, which support integrated management of economies and ecosystems (Rout et al., 2019). Māori businesses are viewed as leaders in sustainable management of natural and environmental resources, while also creating value and wellbeing for their communities (Meech & Bayliss, 2021). Many Māori businesses and iwi trusts voluntarily report on ESG outcomes. For example, Raukawa Settlement Trust have six strategic outcomes disclosed in their Annual Report (Raukawa Settlement Trust, 2021). These strategic outcomes include wider environmental and social outcomes. Ngāti Hauā Iwi Trust use tangata, taiao and tikanga (people, environment, and culture) to report on activities such as the revitalisation of Te Reo Māori, and restoration of whenua (Ngāti Hauā Iwi Trust, 2020).

Māori business operate with a long-term time horizon in mind, and with wider social and environmental aspirations (Meech & Bayliss, 2021). Meech & Bayliss (2021) produced a report for MBIE highlighting sustainability disclosures in general but noted the strength of Māori businesses in embodying Mātauranga Māori frameworks, offering a fundamentally different approach to profit-driven business models. Kaitiakitanga is embedded in the Māori business mindset, and looking after the environment, their communities and regenerative practices is a core aspect of their work. For example, Wakatū Incorporation in Nelson are a Māori owned business whose kaupapa (principle or policy) is to *“grow a sustainable economic base that enables whānau to achieve and maintain spiritual, environmental, social and cultural wellbeing”*. Kaitiakitanga is facilitated by mana whakahaere (governance) and rangatiratanga (customary authority) – these leads to manaakitanga (respect and hospitality), whai rawa (economic prosperity) and whanaungatanga (relationships) (Rout et al., 2019).

Often, ESG values are at the core of Māori owned businesses and are expressed through manaakitanga (respect & hospitality), kaitiakitanga (guardianship), whakapapa (genealogy) and other Māori values (see glossary for more information). As such, sustainable values are often integrated into the organisations governance. For example, a Māori business sector report survey found 88% of respondents considered their business as environmentally sustainable (BDO, 2021). Only 51% of survey respondents said they currently report on ESG outcomes, but two thirds said they would report on these if a reporting tool was available (BDO, 2021). The largest measure of success for the businesses in the survey was “happy and well whānau” demonstrating the fundamental connection between people and business in Māori businesses (BDO, 2021).

. This Act requires mandatory climate reporting for 200 New Zealand organisations, from January 2023. All Climate Reporting Entities (CREs), such as all registered banks, credit unions, and building societies (with >\$1billion assets), Investment managers (with >\$1billion in total assets managed), All licensed insurers (>\$1 billion total assets or annual premium income >\$250 million), Listed issuers of quoted equity securities and listed issuers of debt securities (>\$60 million). See [here](#) for more information.

Similarly, interest in and guidance on nature-related financial disclosures, and sustainability reporting more broadly, will continue to increase. Organisations such as ISSB, the TCFD, and TNFD provide standards to establish comparable reporting metrics, globally.



*SASB is now included in ISSB

Figure 2: Global sustainability standards are backed by the Financial Stability Board (FSB), particularly the TCFD and TNFD. The IFRS Foundation, EFRAG, and FASB are all influenced by the FSB. The IFRS Foundation controls the IASB and ISSB (including SASB) standards, linked via Integrated Reporting (IR). Produced by EnviroStrat Limited.

The Financial Stability Board (FSB) is now driving sustainability disclosures, particularly climate and biodiversity disclosures through the TCFD and TNFD (fig 2). This signals an important shift for financial systems worldwide, with impacts on the real economy. It demonstrates the understanding that our economic systems are fundamentally linked to climate and nature, and that this is being recognised and accounted for by the FSB. The IFRS Foundation are responsible for both the International Accounting Standards Board (IASB) and the newly formed International Sustainability Standards Board (ISSB). Integrated Reporting (IR) links these two standards together, as financial information must be disclosed alongside sustainability disclosures under this framework (see below). The ISSB has entered a Memorandum of Understanding with GRI to work together.

The [European Financial Reporting Advisory Group](#) (EFRAG) is responsible for developing sustainability reporting standards for the European Union. The [Financial Accounting Standards Board](#) (FASB) is responsible for establishing financial accounting and reporting standards for private and public companies in the United States.

Global Standards and International Developments

Sustainability Accounting Standards Board (SASB) Standards

The [SASB standards](#) (now part of the ISSB) provide industry specific sustainability issues, most relevant for reporting on financial performance to enable ESG disclosures. They consist of 77 industries and are designed to assist organisations in disclosing financially material sustainability information to investors. For blue economy entities, the SASB standard on marine transportation, oil & gas exploration, food, and others may be applicable.

Global Reporting Initiative (GRI)

The [Global Reporting Initiative](#) provides both financially material and impact standards for organisations to use in reporting. GRI have 'topic standards' that are used in conjunction with their universal standard. These range from topics such as biodiversity to waste management. In addition, GRI have developed 'sector standards' for some sectors, including Oil & Gas and Fisheries. The standards are designed as a modular system and are interconnected. They allow an entity to publicly report impacts of their activities in a structured way. This allows transparent communication for stakeholders and other end users. GRI are expecting to release a revision to their Biodiversity Standard, which is co-developed with EFRAG (GRI, 2021). A full list of the standards can be found [here](#). Currently in Aotearoa New Zealand, this is the most widely used standard (KPMG, 2020).

CDP Worldwide

[CDP](#) (formerly Carbon Disclosure Project) is a global disclosure mechanism for investors, companies, cities, states, and regions to manage their environmental impact. CDP disclosures focus on three themes: climate change, forests, & water security. There are numerous New Zealand entities using CDP. Wellington City Council and Auckland Council are 'A List' cities, as they publicly disclose city-wide emissions, have emissions targets, have a renewable energy target for the future, and a climate action plan (CPD Worldwide, 2021).

International Financial Reporting Standards (IFRS) foundation

The [IFRS Foundation](#) was "established to develop a set of high-quality, understandable, enforceable, and globally accepted accounting and sustainability disclosure standards" (IFRS Foundation, 2022a). These standards are developed by the International Accounting Standards Board (IASB) and the International Sustainability Standards Board (ISSB). The ISSB was established during the UN Climate Change Conference (COP26) and is developing a comprehensive global baseline of sustainability disclosure requirements. These are the first two draft disclosure standards out for review:

- IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information
- IFRS S2 Climate-related Disclosures

The IFRS Foundation has amalgamated the Climate Disclosure Standards Board (CDSB), SASB & International Integrated Reporting Council (IIRC). The CDSB was consolidated under IFRS Foundation into the ISSB, including the integrated reporting framework, and the SASB Standards, in June 2022. Future ISSB standards will be based on the SASB standards. The Integrated Reporting Framework will become part of the materials of the foundation, linking financial, and sustainability information. The framework takes a principles-based approach and includes a capitals framework, i.e. social, cultural, and natural capitals and requires reporting on the short, medium, and long-term strategy (IFRS Foundation, 2022b).

Convergence of Standards

In recent years, global standards have begun to converge. For example, the IFRS Foundation amalgamated the Value Reporting Foundation (itself an integration of IIRC and SASB) and the CDSB into the International Sustainability Standards Board (ISSB). Similarly, the TCFD and TNFD was mandated by the Financial Stability Board, recognising the role that climate and nature play in global financial stability. They provide climate and nature specific frameworks for reporting by large corporations, including global financial institutions. The convergence of standards reflects a broader movement towards global comparability and transparency, driven by the increase of investors, insurers and other stakeholders requiring this type of information. As climate change and biodiversity loss places pressure on communities and supply chains, organisations are responding to the global movement to reduce impact. Private investment in climate solutions is essential to meet global targets, by 2030 and beyond. As the CDP Worldwide report (2021) highlights, the upstream and downstream emissions of global financial institutions are likely 700 times higher than the direct emissions. As such, some business leaders, and investors, including pension funds and private equity funds, have driven sustainability disclosures as a vehicle for redirecting capital. Knowing which ESG dimensions are materially relevant to entities is a central challenge for creating value for stakeholders and shareholders (Eccles et al., 2012).

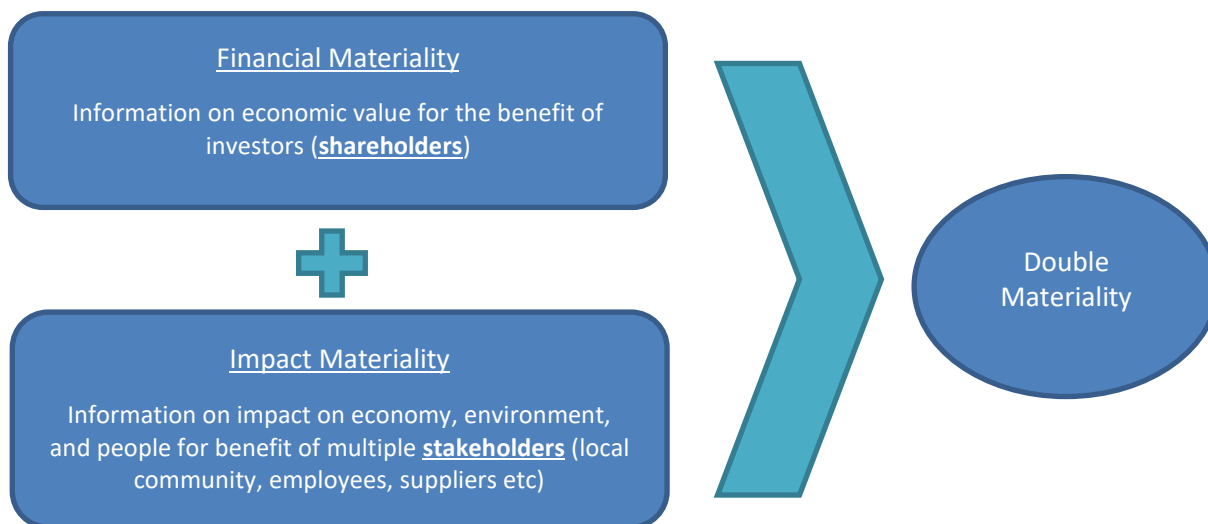


Figure 3: Diagram of 'Double Materiality'. Adapted from GRI (2022) The GRI Perspective 3 – the materiality madness.

The ISSB climate standard, which draws on the Value Reporting Framework (VRF), CDSB, and TCFD frameworks, focuses on financial materiality for an investor-based audience (GRI, 2022a). The IFRS standards under the newly established ISSB will likely be based on financial materiality only (GRI, 2022a).

The increasing use of TCFD and TNFD reporting (discussed below) and the scenarios required by these standards, will be a likely vehicle for the wider disclosure of sustainability impacts. Even where the standards relate to financial materiality, increasing use of TCFD and TNFD reporting will result in a disclosure mechanism similar to double materiality.

The emerging European Sustainability Reporting Standards (ESRS) will be based on double materiality (fig. 2), for a multi-stakeholder audience (ESRS, 2022). Previously in Aotearoa New Zealand, most organisations used GRI (KPMG, 2020). However, since the KPMG report (2020), the IFRS Foundation established the ISSB, which will be the new global standards used. Reporting for double materiality under climate-related or nature-related frameworks with a double materiality principle, will be somewhat familiar to these entities.

Issues-driven disclosures

Issues-driven disclosure refers to sustainability disclosures that emerged in responses to specific issues, e.g. climate and carbon drove disclosures on GHG and other carbon metrics. Similarly, human dimensions such as slavery could fall under issues-driven disclosures. The evolution of issues-driven disclosure could be traced back to early CSR, with a focus on corporate and private philanthropic cash donations being made for particular social and environmental issues. In the last two decades there has been an increased drive for reporting on climate related issues. [The Green House Gas Protocol](#) of 2001 framed reporting on emissions under three scopes. Since then, new frameworks have been developed to address the gaps left by the GHG Protocol (e.g. Natural Capital Accounting, Ocean Accounts Framework, TCFD, TNFD). While international sustainability reporting standards are catching up with investor interest in climate and nature risks and opportunities, some international developments are worth exploring in more detail. Approximately more than half of the world's economic output, US\$44 trillion of economic value production, is high or moderately reliant on nature (World Economic Forum & PWC, 2020). The TCFD and TNFD are particularly relevant for the blue economy, as organisations in the blue economy are often heavily reliant on the ocean for their business.

Taskforce on Climate-related Disclosures (TCFD)

The TCFD aims to establish a global baseline for climate-related financial reporting, supporting the goal of consistent and comparable information. The Climate Disclosure Standards Board (CDSB) Framework was a foundation for the TCFD recommendations and set out an approach for reporting environmental and social information. Disclosures in the TCFD follow the four pillars of governance, strategy, risk management, and metrics & targets.

The United Kingdom (UK) was an early adopter of the TCFD and mandated the framework for reporting and disclosures for the UK's largest companies. The recommendations and implementation are in alignment with the UK government's goals of 'greening' their financial systems and aligning with their net-zero commitments (United Kingdom Treasury, 2021). The U.S. Securities and Exchange Commission (SEC) (2022a) have submitted a proposal that would mandate climate-related disclosures for registrants. The TCFD framework was drawn upon for the SEC proposal, and would require, in some cases, disclosure of an entities' entire value-chain (Whieldon, Almtoft & Olufunwa, 2022). The EU are leading developments on mandated sustainability reporting (see [European Market Developments](#)), and other regions and markets are likely to follow suit, including New Zealand and Australia. Aotearoa New Zealand has mandated climate disclosures with the Climate-related Disclosures Act 2021, but has yet to mandate sustainability reporting.

Taskforce on Nature-related Disclosure (TNFD)

The TNFD is a risk management and disclosure framework for nature-related financial disclosures. Economies are embedded within nature, particularly the blue economy (TNFD, 2022). The TNFD framework is currently in development, using a market-led approach to increase uptake, usability, and effectiveness. As an integrated framework, the TNFD uses existing metrics, standards, and data, enabling reporting entities and end users to be familiar with the core of the framework. However, entities may not have the information they require to understand how nature impacts the entities' immediate financial performance, nor how nature-related risks will impact future performance (TNFD, 2022). The TNFD provides guidance on how entities may work through this (e.g. the LEAP nature risk assessment approach).

The TNFD includes recommendations for disclosures and will follow the TCFD's four pillars of disclosures: governance, strategy, risk management, and metrics & targets (TNFD, 2022).

Recommended disclosures will be released in September 2023, and the TNFD will provide sector specific advice to reduce negative drivers of nature loss in later versions of the framework (TNFD, 2022, p. 21).

Key Market Developments

The European Union (EU) is progressing significant policy and market regulation frameworks, which impact markets and supply chains worldwide. These include the EU Sustainable Finance Package, the EU Taxonomy, and the Corporate Sustainability Reporting Directives. While it remains highly political in the United States, the current administration is progressing market mechanisms to encourage transparency and improved reporting. These advancements in large western markets are expected to be adopted, expanding their impact beyond their geo-political borders. The following examples are not exhaustive but highlight the trend towards enshrining sustainability reporting practices in the market.

European Market Developments

Alongside global standards, the European Union has mandated sustainability reporting for a variety of entities operating in the market. Several market developments to note are:¹¹

European Sustainable Finance Package

The EU released the Sustainable Finance Package in April 2021 (European Commission, 2021). The package is ambitious and comprehensive in the measures to improve the flow of capital towards sustainable growth and activities within the EU. The package supports the EU's goal of being climate neutral by 2050, and aspects of this package require or encourage reporting.

The European Union Taxonomy

The EU Taxonomy is a classification system for environmentally sustainable economic activities (European Commission, 2020). It's a part of the European Commission's work plan and will be followed by standards and labels for green financial products (Ernst & Young, 2020). By creating a set of appropriate definitions on what is an environmentally sustainable activity, the EU taxonomy should *"create security for investors, protect private investors from greenwashing, help companies to become more climate-friendly, mitigate market fragmentation and help shift investments where they are most needed."* (European Commission, 2022). The EU Taxonomy will assist companies who are subject to the sustainability-linked disclosures for financial services sector regulation to disclose information on product or entity levels (Ernst & Young, 2020).

Corporate Sustainability Reporting Directive (CSRD)

Corporate Sustainability Reporting Directive (CSRD) is an amendment to the Non-Financial Reporting Directive (NFRD). The scope of the directive is extended *"to apply to more non-European and European companies listed and operating in the EU regulated markets."* (Wollmert & Hobbs, 2022). Reporting is required from 2024, in line with mandatory EU sustainability reporting standards and alongside external assurance of sustainability reporting (Wollmert & Hobbs, 2022). The CSRD helps extend the European Green Deal across all sectors and existing regulation (Wollmert & Hobbs, 2022).

¹¹ This list is not exhaustive. It demonstrates the trend towards sustainability reporting.

United States Market Developments

The Securities and Exchange Commission (SEC)

In March 2022, the SEC proposed new rules which would require entities to disclose climate-related risks and opportunities, in line with TCFD recommendations (U.S. Securities and Exchange Commission, 2022a). The proposal is open for consultation, and if adopted would apply to all registrants (domestic or foreign), and they would need to include some climate-related disclosures in annual reporting. In some cases, third party attestation is required (Whieldon, Almtoft & Olufunwa, 2022). Broadly, the proposed recommendations align with international standards, namely the TCFD and The Greenhouse Gas Protocol (U.S. SEC, 2022b). The key mandated disclosures include:

- Climate-related risks, and likely or real material impacts on strategy, business, and outlook.
- Description of governance practices in relation to climate-related risks and relevant risk management processes.
- Scope one & two greenhouse gas emissions (likely with third party attestation reports for accelerated filers).
- Scope three emissions, if:
 - a) Scope 3 emissions are material to company, or
 - b) A company has an emissions target which includes scope three.
- Climate-related financial metrics and disclosures as it relates to audited financial statements.
- Information on any climate-related goals and/or targets, and transition plan, if any.

Sustainability Disclosures in Aotearoa New Zealand

There is a history of sustainability reporting in Aotearoa. A 2020 KPMG survey on sustainability reporting found 74% of New Zealand's top 100 revenue generating entities report on sustainability. This is behind the 80% global average, and 86% average for NZ's top 6 trading partners in 2020 (KPMG, 2020). The landscape has changed since 2020, with the global drive towards more systematic sustainable reporting and the formation of the ISSB and TCFD. The introduction of the Climate-related Disclosures Act (2021) is also expected to shift the dial in Aotearoa New Zealand.

In October 2021, the New Zealand Parliament passed the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act. The Act amends several acts (The Financial Markets Conduct Act 2013, the Financial Reporting Act 2013, and the Public Audit Act 2001) to implement a broad, single policy. This amendment requires climate-related disclosures by certain reporting entities, the disclosures are based upon the TCFD recommendations and include four categories: governance, strategy, risk management, and metrics and targets (Climate-related Disclosures Amendment Act 2021). Currently, the Act applies to large entities such as large banks and other deposit takers, insurers, large licensed issuers, and large managers of managed investment schemes.¹²

¹² See section 461Q of the Climate-related Disclosures Amendment Act 2021 for a definition of 'large' entities.

Responsibility for setting financial reporting standards in New Zealand falls to the External Reporting Board (XRB).

The External Reporting Board

The New Zealand External Reporting Board is made up of the New Zealand Accounting Standards Board, the XRB board and New Zealand Auditing and Assurance Standards Board.

The New Zealand External Reporting Board focuses on several areas:

- **Developing a financial reporting strategy for New Zealand.**
- **Preparing and issuing accounting standards.**
- **Preparing and issuing standards for assurance practitioners.**
- **Liaising with national and international organisations that have similar standard setting functions.**

The XRB is currently developing a climate-related financial disclosures standard for New Zealand, utilising international standards and frameworks. The board is taking consultations from preparers and end users to incorporate into the final standard, expected in December 2022. Additionally, the XRB is overseeing the development of a Te Ao Māori framework for ESG reporting, *Ngā pou o te kawa ora* (External Reporting Board, 2022b). The XRB use guidance from the New Zealand Treasury's [He Ara Waiora](#).

The XRB was tasked to develop a set of standards for adopting the TCFD recommendations and facilitating the implementation of the Act. It has become the pivotal agency driving sustainability disclosure in Aotearoa New Zealand

Although not mandated under the act, the XRB was tasked with setting the climate reporting standards as part of the wider climate-related disclosures framework and guidance on non-financial matters (External Reporting Board, 2022a). The XRB released an exposure draft of the Climate-related Disclosures framework for consultation, which was open until September 2022 (External Reporting Board, 2022a). The exposure draft contained the entire climate-related disclosures framework, including draft versions of New Zealand's Climate Standards (NZ CS): NZ CS 1 (climate-related disclosures), NZ CS 2 (first-time adoption of Aotearoa New Zealand climate standards), and NZ CS 3 (general requirements for climate-related disclosures).

The standard is expected to be finalised and issued by December 2022, enabling climate disclosure for large entities to be mandatory from 1st January 2023. Once the climate standard is issued, entities with up to NZ\$60 million of market capitalisation, and over NZ\$1 billion of assets will be required to disclose their climate-related information (External Reporting Board, 2022a) according to the standard on their next accounting period.

The expectation is that mobilising private financial markets to consider climate-related risks and disclosures will have downstream effects on supply chains that may have escaped reporting. Encouraging governance structures to account and consider climate risks and opportunities is expected to redirect capital to climate positive investments and away from high carbon investments.

New Zealand was an early mover in adopting TCFD recommendations, particularly the 'comply or explain' disclosure for financial institutions (Naik, 2021). Since KPMG's *The Time Has Come* report in 2020, the New Zealand Parliament has passed the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021. The Act mandated climate-related risk reporting for large businesses in New Zealand. It encourages climate-related reporting

alongside financial reporting, in line with the TCFD recommendations. Around 200 of New Zealand's largest organisations are required to report on their climate-related risks from January 2023.

Globally, nature-related disclosures (financial or otherwise) remain low. The WWF (2022), for example, reports continuing biodiversity loss despite efforts in the sustainability reporting arena (WWF, 2022). Indeed, only ten organisations in Aotearoa report on their impacts on nature despite New Zealand's economic reliance on nature (KPMG, 2020).

Commitments to nature-related disclosures are a possible route forward and the TNFD has developed reporting frameworks. While uptake of nature-related disclosures remains low globally, the new international TNFD reporting frameworks may be a path forward for Aotearoa New Zealand.

Currently, nature-related reporting is not mandated. However, the External Reporting Board (XRB) have expressed interest in providing guidance for New Zealand organisations on the TNFD in future. Challenges here include compliance fatigue and ensuring that frameworks are suitable for diverse sectors and can be adapted as needed. While flexibility through sector-specific metrics and targets can be built in, there is little enthusiasm among firms for further regulatory requirements at this point.

An initial principles-based approach to nature-related disclosures may provide a less onerous pathway. Sustainable Seas is developing Principles for a blue economy. Here, Māori interests and values will be pivotal to establishing appropriate principles.

Māori-owned enterprises and Sustainability Disclosures

Kaitiaki-centered business models embody commercial and social activity within sustainable ecosystem processes, which support integrated management of economies and ecosystems (Rout et al., 2019). Māori businesses are viewed as leaders in sustainable management of natural and environmental resources, while also creating value and wellbeing for their communities (Meech & Bayliss, 2021). Many Māori businesses and iwi trusts voluntarily report on ESG outcomes. For example, Raukawa Settlement Trust have six strategic outcomes disclosed in their Annual Report (Raukawa Settlement Trust, 2021). These strategic outcomes include wider environmental and social outcomes. Ngāti Hauā Iwi Trust use tangata, taiao and tikanga (people, environment, and culture) to report on activities such as the revitalisation of Te Reo Māori, and restoration of whenua (Ngāti Hauā Iwi Trust, 2020).

Māori business operate with a long-term time horizon in mind, and with wider social and environmental aspirations (Meech & Bayliss, 2021). Meech & Bayliss (2021) produced a report for MBIE highlighting sustainability disclosures in general but noted the strength of Māori businesses in embodying Mātauranga Māori frameworks, offering a fundamentally different approach to profit-driven business models. Kaitiakitanga is embedded in the Māori business mindset, and looking after the environment, their communities and regenerative practices is a core aspect of their work. For example, Wakatū Incorporation in Nelson are a Māori owned business whose kaupapa (principle or policy) is to "[grow a sustainable economic base that enables whānau to achieve and maintain spiritual, environmental, social and cultural wellbeing](#)". Kaitiakitanga is facilitated by mana whakahaere (governance) and rangatiratanga (customary authority) – these leads to manaakitanga (respect and hospitality), whai rawa (economic prosperity) and whanaungatanga (relationships) (Rout et al., 2019).

Often, ESG values are at the core of Māori owned businesses and are expressed through manaakitanga (respect & hospitality), kaitiakitanga (guardianship), whakapapa (genealogy) and other Māori values (see glossary for more information). As such, sustainable values are often integrated into the organisations governance. For example, a Māori business sector report

survey found 88% of respondents considered their business as environmentally sustainable (BDO, 2021). Only 51% of survey respondents said they currently report on ESG outcomes, but two thirds said they would report on these if a reporting tool was available (BDO, 2021). The largest measure of success for the businesses in the survey was “happy and well whānau” demonstrating the fundamental connection between people and business in Māori businesses (BDO, 2021).

Small and Medium-sized Enterprises (SMEs) and Sustainability Disclosures

Small and medium businesses¹³ make up 97% of firms in New Zealand, employ 29.3% of the workforce, and contribute to over a quarter of GDP (MBIE, 2022). Typically, SMEs lack the resources to prepare sustainability reports like larger entities and research has shown that business size affects the degree of knowledge and application of sustainability management tools (Hörisch et al. 2014).

The GRI Sustainability Disclosure Database shows that only 12% of the sustainability reports in the database were generated by SMEs in 2021. While sustainability reporting is a more common practice amongst large companies, SMEs in New Zealand are also adopting a wide range of sustainability practices as result of owners and employees’ values and beliefs as well as reputation and brand considerations (Collins *et al.*, 2010). B Corp is one of the frameworks driving impact measurement and disclosure and there are now 142 New Zealand SMEs with B Corp certification.¹⁴ Furthermore, while the mandatory climate-related disclosure standards only apply to large entities, procurement and fiduciary duty considerations will lead to requirements placed on SMEs to enhance climate-disclosure. This requires further resources and tools to be developed that meet the needs of SMEs and are appropriate for their capability.

Again environmental performance, regulatory fatigue, compliance issues, and sustainability and nature-related reporting deficits might be addressed initially through the development of principles, especially in conjunction with programmatic shifts in thinking and action towards ideas such as the blue economy.

Sustainability Disclosures in blue economy

There isn’t a broadly accepted blue economy definition to date. However, for the purposes of this report, we are using the Sustainable Seas National Science Challenge definition of the blue economy as “[*marine activities that generate economic value and contribute positively to social, cultural, and ecological well-being*](#)”. The blue economy includes multiple sectors such as shipping, fisheries, aquaculture, offshore oil and gas, and coastal and marine tourism (from cruise ships to local coastal tourism operations).¹⁵

Sustainability disclosure and reporting varies by sector, including in the blue economy. No standards or frameworks explicitly include the blue economy perspective; however standards and frameworks are still utilised in blue economy sectors. Sectors such as ports, shipping, fisheries, and marine oil and gas are likely to be incentivised to report on climate and nature-related disclosures as investors increasingly demand sustainability reporting. However,

¹³ Defining SMEs in New Zealand is typically based on the number of full-time employees (FTEs), and businesses with less than 49 FTEs are considered SMEs (MBIE, 2019).

¹⁴ Database accessed in December 2022.

¹⁵ For more information on the blue economy and the principles that underpin the concept, see the ‘*Developing blue economy Principles for Aotearoa New Zealand*’ report.

emerging industries, such as marine bioprospecting / biotechnology, are less likely to have sector specific metrics and targets, or established sustainability reporting standards to report against.

Enabling tools for Sustainability Disclosures

Sustainability disclosures in the blue economy can be enabled by certain tools, outside of the usual standards and frameworks. Enabling tools give organisations principles and frameworks to either generate data themselves, or guide decision making and policy environments in support of climate positive and nature positive practices. For example, the above-mentioned standards provide frameworks for reporting, which can inform decision making (see description of standards in Global Standards and International Developments). Several tools exist to enable robust sustainability disclosures. A summary of key tools is given below:

- **Natural Capital Accounting (NCA) and Valuation**

Natural Capital Accounting is an accounting framework that provides a systematic method for measuring and reporting stocks and flows of natural capital (SEEA, 2022). It covers accounting for specific environmental assets (abiotic and biotic) as well as ecosystem assets (e.g. wetlands or forests), biodiversity, and ecosystem services. For businesses, the Natural Capital Protocol was developed as a decision-making framework to enable organisations to identify, value and measure the direct and indirect dependencies and impacts on natural capital (Natural Capital Coalition, 2016).

To advance the conversation and knowledge about the value of natural capital as part of the Living Standards Framework, New Zealand Treasury have adopted the Total Economic Value (TEV) framework to provide more information about the quantity, state and value of natural capital in New Zealand. There is significant data limitations in valuing natural capital

- **The Ocean Accounts Framework**

The Ocean Accounts Framework is a conceptual framework, which can be used to measure the sustainable development of the ocean (in line with the United Nations Sustainable Development Goals). It organises economic, social, and environmental information, enabling measurements towards sustainable development (Global Ocean Accounts Partnership, 2022). The Ocean Accounts Framework is similar in structure to national accounts and are compatible with a range of systematic accounting frameworks. For example, it is similar in structure to System of National Accounts (SNA), System of Environmental-Economic Accounting (SEEA), and the ten Fundamental Principles of Official Statistics and the Framework for Development of Environment Statistics.

- **Marine Spatial Planning (MSP)**

Marine Spatial Planning is a process of allocating and analysing temporal and spatial distribution of human activities in marine areas. This public process aims to achieve economic, social, and ecological objectives that are usually defined in a political process (UNESCO/European Commission, 2021). MSP is an important tool to achieve EBM, as it is a practical decision-making process to implement many of EBM's core elements.

Effective and well-designed MSP can enable better sustainability disclosures in the blue economy by optimizing marine spaces for multiple stakeholders, and potentially reducing collective impacts.

- **Ecosystem-based Management (EBM)**

Ecosystem-based Management is a holistic framework for managing competing uses, and demands on, marine environments, which maintains or improves ecosystem health (Sustainable Seas, 2018). Decision-making using an EBM approach draws on cultural and scientific knowledge (Rojas-Nazar, Cornelisen & Hall, 2022). Several tools and resources are available for stakeholders and decision-makers to use for policy and planning, including a range of frameworks. For example, the [‘User guide: Tools for ecosystem-based management’](#) (2022).

- **Science Based Target-setting initiative (SBTi)**

SBTi is focused on driving ambitious climate action in the private sector by enabling organizations to set science-based emissions reduction targets (Science Based Targets, 2021a). In addition to developing a range of target setting sector-specific guidance, SBTi also tracks and reports about the companies taking action following SBTi requirements (Science Based Targets, 2021b). The Science Based Targets Network builds on the work of SBTi by providing targets setting guidance for the global commons: air, water, land, biodiversity and ocean. A first release of targets setting resources is currently in preparation and focuses on freshwater and land - complementing those on climate developed under the SBTi (Science Based Targets Network, n.d.).

In addition to these enabling tools, there are some blue economy specific tools that can be useful for sustainability disclosures. These include:

- 1. Blue Economy Principles**

Blue economy principles, such as the UNEP FI blue economy principles or the United Nations High Level Panel for Oceans, give a set of guiding principles for BE sectors to report performance against. Sustainable Seas is developing Aotearoa New Zealand specific blue economy principles. For more information, please refer to the Sustainable Seas National Science Challenge *‘Developing Blue Economy Principles for Aotearoa New Zealand’* (2022) report and subsequent work.

- 2. Product-related Value Chain Assessments**

Communicating a product’s environmental footprint or impact is a useful tool for organisations to connect with consumers and target performance improvements across the supply chain. Tools such as Life Cycle Assessments (LCA), Environmental Product Declarations (see example in box below), and eco-labelling such as the Marine and Aquaculture Stewardship Councils (MSC and ASC) can give products a premium advantage and market access (for example, see the NZ King Salmon example below).

New Zealand King Salmon Environmental Product Declaration (EPD)

New Zealand King Salmon are the first in Australasia to acquire an EPD on their product. NZ King salmon collaborated to create the first Product Category Rules (PCR) for global salmon production. This was used to develop the EPD, which is independently third-party verified and can be benchmarked against other EPDs. The EPD assess two NZ King Salmon products against a range of environmental indicators (carbon, energy, waste etc). This supplements other studies, including a double materiality assessment. The EPD can be found [here](#).

Blue Economy Sector Disclosures

This section discusses current practices and frameworks used in the blue economy in Aotearoa New Zealand. Examples and case studies of organisational practices offer insight into the challenges related to the uptake of sustainability disclosures in these sectors. The case studies for each sector give a snapshot of how sustainability disclosures are utilised in a range of New Zealand blue economy entities.

Fisheries, Aquaculture & Seafood Processing

Sustainability disclosures in the Fisheries, Aquaculture and Seafood processing sector vary. For example, Talley's Seafood (a privately owned organisation) disclose their commitment to sustainability principles (i.e. a principles approach), but do not publicly disclose quantitative information about their operations. Conversely, Sanford has a publicly available [sustainability policy](#), with an outcome-based approach. The policy is aligned with the UN SDGs and is reviewed every two years to ensure the outcomes are relevant to the business. Sanford issues an integrated annual report using both the IIRC and GRI standards (Sanford, 2021). The company has recently won the 2022 Australasia Reporting Award – Best of Sector for Resources and Production and Best Sustainability Report. The Sanford Sustainability report was praised for its consistent framing of issues through each section, in terms of strategic focus, materiality, and clear targets. Both positive and negative performance outcomes were included, increasing transparency (Australasian Reporting Awards, 2022). Moana New Zealand are a Māori owned enterprise which use integrated reporting, weaving its core values through the organisation.

Sustainability Disclosure at Moana New Zealand

<https://moana.co.nz/>

Māori values and modern reporting tools come together in integrated reporting for Moana New Zealand. Four core values weave through the organisation, operations and partnerships - **manaakitanga** – Looking after people our way, **whakapapa** – Our genealogy / where we are from, **whakatipuranga** – Prosperity for future generations, and **kaitiakitanga** – Custodians for future generations. Moana is unique as the largest Māori-owned fisheries company in Aotearoa New Zealand, with 80% of income shares being held **by all iwi**. In 2016, Moana New Zealand adopted the Integrated Reporting framework. Materiality is assessed with participation from iwi shareholders, suppliers, and customers every two years with a sense check in the year between. Since going online with the annual reporting, Moana can measure stakeholder engagement, which has been positive.

The dividend to iwi from Moana’s business operations support the Māori economy, funds community projects and businesses and bolsters regional employment. Moana supports hapū by employing whānau-operated contractors, who in turn contribute to their communities. Moana supports community initiatives such as Kai Ika, Papa Honez One Whānau At A Time, and Kiwican. These initiatives support tamariki, kaumatua and kuia.

Disclosure can be enhanced when organisations comply with performance standards, e.g. science based targets. These can be used to inform targets and underpin sustainability disclosures. For example, the Seafood Stewardship Index scores the 30 largest global seafood companies across 30 indicators, including governance & strategy, social responsibility, ecosystems, and traceability. Companies are selected using five criteria, particularly ‘keystone’ companies with large market shares.¹⁶ The results are presented as a scorecard for each company (fig 4; World Benchmarking Alliance, 2022).

¹⁶ More information on this process can be viewed here:

<https://assets.worldbenchmarkingalliance.org/app/uploads/2021/03/Seafood-Stewardship-Index-Methodology.pdf>



Figure 3 Example of a World Benchmarking Alliance Seafood Stewardship Index Scorecard, for Royal Greenland. [Seafood Stewardship Index | World Benchmarking Alliance](#)

In 2022, GRI issued GRI 13: Agriculture, Aquaculture and Fishing standards to increase the comparability and completeness of sustainability information for crop cultivation, animal production, aquaculture, and fishing organisations (GRI, 2022b). Agriculture, aquaculture, and fishing have widely documented impacts across environmental, economic, and social dimensions (GRI, 2022c). This includes impacts on human rights, poverty, inequality, climate change and biodiversity (GRI, 2022c). As such, it was selected as a sector for standards by the Global Sustainability Standards Board in 2020. The standard comes into effect from January 1st, 2024. Other examples of performance standards include the Science-Based Targets for Sustainable Seafood and the Ocean Disclosure Project (ODP). ‘Setting science-based targets in the seafood sector: best practice to date’ provides guidance for setting science-based targets (SBTs), based on existing seafood sectors organisations who have made SBTs (Moberg, Selwyn & Rhatigan, 2022). The ODP began in 2015 as a framework for organisations to report their sustainable seafood sourcing. It works by organisations submitting their seafood sourcing information and in return, it receives a map of their seafood sourcing.

Shipping

The International Maritime Organisation (IMO) set an ambitious goal of decarbonising the sector by 2050 (Di Vaio et al., 2021). This drove attention to Integrated Reporting, and corporate strategic planning, with the UN SDGs as the benchmark goal (Di Vaio et al., 2021). While commitment to meeting 2030 targets is present in cruise and container shipping markets, reported information is predominantly qualitative (Di Vaio et al., 2021). A lack of indicators for measuring and reporting impact limits the sector (Di Vaio et al., 2021). This will need to be addressed to improve shipping sustainability disclosures. Movement towards ‘greening’ operations is underway, and green shipping management is shown to positively effect financial and environmental performance (Lirn et al., 2014). Lirn et al (2014) highlight the three dimensions of green shipping management as greener policy, greening ships, and greener suppliers. Green policies directly and positively influence ships and suppliers. Greener suppliers and ships indirectly and positively influence financial performance through improved

environmental performance (Lirn et al., 2014). For example, Maersk is a global shipping company with significant operations in Aotearoa New Zealand, including in coastal shipping. Maersk is a significant player in Aotearoa's blue economy, connecting Aotearoa to the global markets. As a global shipping company, it is committed to reducing emissions and developing alternative carbon-neutral transport options. The case study below outlines their sustainability disclosure practices.

Sustainability at Maersk

<https://www.maersk.com/>

Maersk's ESG strategy revolves around three core commitments: Take leadership in the decarbonisation of logistics, ensure its people thrive at work by providing a safe and inspiring workplace, and operate based on responsible business practices. Within decarbonisation, Maersk is continually improving their sustainability performance to reach the three central goals of:

1. By 2030: Industry-leading green customer offerings across the supply chain, including 25% of ocean cargo transported with green fuels.
2. By 2030: GHG emissions reductions aligned with a Science-Based Target initiative 1.5 degree pathway, including a 50% reduction in emissions intensity in ocean operations, compared to a 2020 baseline
3. By 2040: Net zero CO_{2e} emissions across the business (scopes 1, 2 and 3) and 100% green solutions to customers.

Maersk are focusing on greening their operations and supply chain, with their Maersk Eco Delivery shipping offering continually growing since its establishment in 2019. Maersk has ordered one feeder vessel and 12 large ocean-going vessels which Maersk intends to operate on green methanol as soon as possible, with a total investment of around 2 billion USD. To fuel their entire fleet Maersk would require 20 million tonnes of green methanol once in operation, these vessels will have a yearly consumption of about 0.5 million tonnes of green methanol. Maersk has made seven green methanol offtake partnerships with leading companies who develop green methanol production. In addition, Maersk Growth has made several investments into green fuels start-up companies.

Of Maersk's top 200 customers, two thirds have committed to either science-based targets or net zero carbon emissions in their supply chains, driving Maersk to deliver green options for their customers.

Ports

Ports have a multitude of competitive pressures, from improving profitability and productivity, to engagement with multiple stakeholder interests (Ashrafi et al., 2020). Increasingly, port authorities are looking to improve sustainability performance in response to community and stakeholder expectations (Yigit & Acarkan, 2018). It is largely driven by stakeholder demands for transparency and accountability (Notteboom et al., 2015). The industry is striving to meet the expectations and align with international trends towards sustainability (Dooms, 2019). There are no port-specific frameworks for sustainability disclosures. However, some local examples of improvement in sustainability exist, such as MacNeil et al. (2021) who propose a framework for improving sustainability reporting in Canadian Ports, for closer alignment to the UN SDGs. Sustainability disclosures vary by sector, and ports face unique challenges to

reporting. Ports of Auckland is one of the largest ports in Aotearoa. The case study below presents the port's commitments.

Sustainability Disclosures at Ports of Auckland

<https://www.poal.co.nz/>

Ports of Auckland Limited (POAL) set an ambitious target of net zero emissions by 2040. It began measuring GHG emission in 2017 and has set science-based targets for 2032 and 2040. The port annually audits its emissions inventory for all three GHG emission scopes. It has Toitū carbon-reduce certification and is a member of the Sustainable Business Council, Climate Leader's Coalition, C40 Green Ports Forum, and World Port Sustainability Program. However, POAL do not yet include sustainability disclosures in their annual reports.

As a key BE sector business, POAL are making strides in their commitments to reducing emissions, particularly by including scope 3 emissions. These are indirect emissions from activities or assets not owned or controlled by the reporting organization. These emissions usually account for up to 70% of an entities' carbon footprint and are vital for meaningfully reducing sector emissions. POAL may have policies on biodiversity and the marine environment, however no clear information on commitments or disclosure on nature-related issues is currently available.

Marine & Coastal Tourism

Marine and Coastal Tourism accounts for roughly 50% of all global tourism, equal to 5.2% of global GDP, or US\$4.2 trillion annually (Northrop et al., 2022). More importantly for the Pacific region, marine and coastal tourism is an essential component of small island economies and coastal economies (Northrop et al., 2022). In Aotearoa, the tourism sector contributed \$15.9 billion to GDP in 2018, with estimates of coastal tourism contributing 1.1% to GDP in 2019 (Yeoman, Fairgray and Lin, 2019). This sector ranges from international cruise ships (also considered under shipping) to small local tourism providers. Disclosures across the range of organisations will inevitably vary, as will the capacity and resourcing available to disclose information. Sustainability practices in the sector will be influenced by the nation and region within which the entity is operating. Tourists could be powerful drivers of change in the sector with support for regenerative and sustainable tourism offerings at destinations increasingly in demand (Northrop et al., 2022). Marine eco-tourism in Aotearoa can be a growth sector for Māori owned enterprises, with benefits for iwi. Sustainability disclosures for Whale Watch Kaikoura tend to be values-driven.

Whale Watch Kaikoura – Marine Eco-tourism

<https://whalewatch.co.nz/>

Whale Watch Kaikoura are a strong example of Māori values leading sustainable business practice which benefits communities. Whale Watch Kaikoura is owned and operated by Ngāti Kuri, a sub-tribe of Ngāi Tahu. In 1987, Ngāti Kuri leaders saw an opportunity to uplift their community when local employment dropped. Operations began with an inflatable boat, carrying eight people. Now, Whale Watch Kaikoura has a fleet of modern catamarans, servicing up to 100,000 people annually.

Values like manaakitanga (hospitality) and whakaute (reverence) for the natural world drive operations. The iwi philosophy of *“there must always be enough, more than enough, to sustain life in its entire spiritual and physical sense”* underpins the iwi ethics. The vessels are designed specifically for whale watching, with underwater noise reducing engines & self-contained toilet systems. Care is taken with each whale, with the skippers tailoring interactions to the whales’ comfort.

Leveraging Biodiversity and Climate Agendas for the Blue Economy

Increasingly, global risk assessments highlight climate change and biodiversity loss as a significant risk to human wellbeing and to economies (IPBES, 2019). International efforts to develop standards, frameworks, metrics, and targets to contribute to the dual climate and biodiversity agendas are significant. There is continuous effort in global processes to position ocean and coastal nature-based solutions in the climate adaptation agenda, including at the current United Nations Framework Convention on Climate Change COP 27. The Stockholm Resilience Centre (2020) report on New Zealand’s ‘safe operating space’ highlighted New Zealand’s primary industry-based economy’s high reliance on nature and the risks current approaches pose to a sustainable future.

Work by the IFRS Foundation to establish the ISSB recognises the importance of comparable reporting. Furthermore, the Financial Stability Board have strengthened the connection between climate, nature, and financial stability with the development of the TCFD and TNFD. As the Financial Stability Board is the principal global authority for global financial systems, the move to develop the TCFD and the TNFD is significant. The global financial system will respond accordingly, and it is highly likely that double materiality and climate and nature-related financial disclosures will increasingly become the norm.

Conclusion

This report provides a stocktake of sustainability disclosure practices and initiatives globally and in Aotearoa New Zealand, covering developments in the blue economy space and provides insights into disclosure practices in selected marine sectors. The purpose of this report is to establish a knowledge base and state of play related to considering nature and ecosystems in blue economy sectors and the related finance and insurance sectors. It is a stocktake, with a view to factoring marine ecosystems and socio-cultural values through new measurement and reporting initiatives, such as the Taskforce on Climate-related Financial Disclosures (TCFD) and Taskforce on Nature-related Financial Disclosures (TNFD).

This report found sustainability disclosure standards are converging, which will ultimately drive more consistent and comparable reporting. The double materiality of reporting, which considers financial and impact materiality, is an important consideration. Biodiversity and nature-related financial disclosures are likely to be required in the future, aligning with the recommendations of the TCFD and TNFD. The joint risk and opportunity assessment encouraged by the TCFD and TNFD promotes more holistic approaches to climate and nature-related financial disclosures. Additionally, this report highlights how Māori-owned enterprises tend to embody the values underpinning sustainability reporting due to the alignment with te ao Māori, which inform organisational values. Lastly, Aotearoa New Zealand has already adopted TCFD recommendations with the introduction of the Climate-related Disclosures Act in 2021. However, it lacks a presence in, and exposure to other relevant initiatives, such as the UNEP FI Sustainable Blue Economy Finance principles.

What does this mean for Aotearoa's blue economy?

Blue economy entities have a strong incentive to address nature in their performance and reporting, as blue economy entities rely on thriving ecologies and natural capital. Increasingly, access to capital from financial entities requires evidence of environmental performance, and consideration of the interests and values of communities. Furthermore, the political implications of poor performance in ocean commons, and impacts on market actors poses challenges for the long-term sustainability of their business, and their license to operate.

International developments on issue-driven disclosures, such as the TCFD and TNFD, are led by the financial sector (banks, insurers, and investors) and increasingly linked to regulatory frameworks in many jurisdictions i.e. compliance under the Climate-related Disclosure Act 2021. The implementation of the TCFD (and potentially in future, the TNFD) by the financial sector will spill into sectoral practices in real economy i.e. risk assessment, climate resilience and market strategies, investment, and climate and GHG emissions reporting. The downstream pressures from changing financial requirements for reporting risks on climate already has a material impact on many entities. Entities are still building their expertise with climate-related disclosures even though there is much greater awareness, knowledge, and tools available to private sector in the climate and carbon management space.

In New Zealand, if banks and insurers take on the full considerations under the TNFD, many New Zealand entities will need to locate, assess, manage and report their nature-related risks. Unlike climate reporting, which has developed tools and data over 20 years, nature and biodiversity reporting lacks extensive tools and data that organisations can use to assess risks, set targets, and disclose performance. There is great complexity and uncertainty in relation to sampling methodologies and accounting which means biodiversity data lags behind in use and

application. Marine monitoring to underpin data collection and analysis is particularly inadequate. New Zealand lacks the experience, practice and sufficient data (and access to existing data) for entities to report on nature and biodiversity.

This challenge will only continue without development of data and tools to support accurate and meaningful risk assessment and reporting.

Future Research: Nature-related disclosures in Aotearoa's blue economy

Aotearoa's heavy reliance on nature in our economy is both a risk and an opportunity for blue economy entities and capital providers. Blue economy sectors can take early action to address the impacts and dependencies on ecosystems as part of risk management. The advent of the Aotearoa New Zealand [Climate-related Disclosure Standards](#) and experience with sustainability disclosures to date creates a favourable context for exploring nature-related disclosures. Aotearoa's expertise in conservation, ecosystem-based management and mātauranga Māori provide strong foundation for building awareness and capability for nature-based decisions. Embracing the TNFD early and assessing risks and opportunities in the emerging nature-related reporting space, will enable a proactive stance on nature-related issues and could provide an advantage to the blue economy sectors.

Blue economy decision makers need data to make good performance and disclosure decisions. Understanding the framework of measurement is the first step to developing datasets necessary for reporting. The TNFD will likely provide a useful framework for evaluating and disclosing nature-related financial risks and opportunities. Decision-makers will need data on ecological impacts, environmental data, social and economic data to fully understand the risks and opportunities. The responsibility to produce and provide data has yet to be determined in Aotearoa's blue economy. However, cooperation with blue economy sectors is necessary for cumulative gains at ecosystem level, encouraging ecosystem-based management approaches.

A nature-related financial disclosures pilot for Aotearoa New Zealand's blue economy sector could be a starting point for increasing reporting readiness for entities. A pilot could advance knowledge and practices of nature-related disclosures, informing the blue economy sector and other adjacent sectors (for more information, see Appendix One). Ecosystem-based management (EBM) learnings generated by the challenge's experience can be applied and support blue economy pilot work. Furthermore, a pilot for Aotearoa New Zealand can facilitate debate within the blue economy sector on using a values-based approach, reflecting te ao Māori, to convey a message to consumers through disclosure.

Aotearoa New Zealand's blue economy could be improved by leveraging international climate and biodiversity agendas. For example, ecological improvements would benefit fisheries, marine tourism and communities, while social license to operate may be improved with better measurement and reporting for performance on nature and biodiversity. Aotearoa blue economy entities and other stakeholders could consider the following areas of development ahead of implementing nature-related financial disclosures:

- Relevant ecological data for sector e.g. fishing sector needs to understand fishing stocks including drivers of degradation relevant to their operations vs. coastal & marine tourism might reflect on coastal erosion or inshore impacts rather than fishing stocks.
- Role of government (local and national) in data collection and management, particularly for ports.

- Coastal and marine tourism investment in Nature-based Solutions to further develop sustainable tourism practices.
- Te ao Māori led governance and engagement for co-design and implementation of reporting standards and frameworks in Aotearoa's blue economy.

Appendix One

Increasing readiness for nature-based disclosure: framing a potential pilot experiment in Aotearoa New Zealand's Blue Economy

The TCFD and TNFD will be important for New Zealand as an economy heavily reliant on nature but also deeply connected to the global financial system. To progress sustainability disclosures in the blue economy agenda and leverage the climate and biodiversity agendas, further steps to be taken could include:

- Invest in experimental pilots and early initiatives for nature-based disclosures in blue economy organisations to increase readiness for nature-based disclosures - in line with the TNFD metrics, targets and framework.
- Support and develop leadership in blue economy sector entities, encouraging adoption of TNFD frameworks where appropriate; this includes recognising and leveraging the synergies between climate disclosures and nature as means to reduce the burden on businesses and financial sector.
- Support integration of te ao Māori into all efforts for climate and nature related-disclosures. This will require, however, careful consideration of the risks of appropriation of mātauranga. Involvement of, and co-development with mana whenua will be necessary to support appropriate nature-related disclosure metrics.

For the Challenge, a suggested next step is to support a blue economy nature-related disclosures pilot with a selection of interested blue economy entities. This pilot could build practice, generate learnings, and contribute an Aotearoa's perspective to the body of knowledge regarding the integration of nature in business and investment decisions. The purpose of the pilot would be to increase nature-disclosure readiness in the blue economy by aligning with TFND (and leveraging its community of practice and experimentation) and deploying knowledge available within the Challenge (including industry and its stakeholders).

The following considerations are proposed in scoping the pilot:

- Sectors to focus on engaging:
 - Fisheries or aquaculture e.g. Moana New Zealand, Sanford, GreenWave NZ.¹⁷
 - Marine infrastructure e.g. Port of Napier or Ports of Auckland.
 - Investment e.g. institutional investor or banking such as ANZ, who is involved in the Sustainable Seas Pāua Risk and Resilience research project.
- Realm: ocean, with option for a place-based pilot at the marine-land interface.
 - Personal communication with practitioners in the TFND space have confirmed that the ocean realm has been difficult to cover, with not many pilots in this space. Same applied for indigenous perspective.
- Interest and capacity (of pilot organisations):
 - support from senior leadership, time availability, and other resources (data availability, internal processes for risk and value assessment).
- Willingness to share insights and engagement with mana whenua are preconditions for an effective pilot.

¹⁷ A seafood retailer or processor influence over producers would also be considered.

The detailed scope for the pilot experiment will be confirmed through further engagement with potential candidates. Depending on interest and resources, a desk-top or in-depth pilot approach may be pursued.

References

- Agrawal, A. (2001). Common property institutions and sustainable governance of resources. *World Development*, 29(10), 1649–1672. [https://doi.org/10.1016/S0305-750X\(01\)00063-8](https://doi.org/10.1016/S0305-750X(01)00063-8)
- Ashrafi, M., Walker, T. R., Magnan, G. M., Adams, M., & Acciaro, M. (2020). A review of corporate sustainability drivers in maritime ports: a multi-stakeholder perspective. *Maritime Policy & Management*, 47(8), 1027-1044.
- Australasian Reporting Awards (2022). 2022 Australasian Reporting Awards Handbook. Retrieved from https://static1.squarespace.com/static/612c6343a84af13ad0b61050/t/6330f84f95701b57a65d81e5/1664153689631/2022+ARA+Handbook+2022+V13+130922_Single+Page_FINAL.pdf
- BDO (2021). Māori Business sector report. Retrieved from <https://www.bdo.nz/en/industries/maori-business/maori-business-survey>
- CDP Worldwide. (2021) City A list Scores. Retrieved from <https://www.cdp.net/en/cities/cities-scores>
- Collins, E.M., Roper, J. & Lawrence, S.R. (2010). Sustainability practices: trends in New Zealand businesses. *Business Strategy and the Environment*, 19(8), 479-494.
- Covington, (2019). Sustainability toolkit: corporate sustainability disclosure – the basics. Retrieved from <https://www.cov.com/-/media/files/corporate/sustainability-toolkit/sustainability-toolkit--corporate-sustainability-disclosure-the-basics.pdf>
- de Villiers, C., La Torre, M. and Molinari, M. (2022), "The Global Reporting Initiative's (GRI) past, present and future: critical reflections and a research agenda on sustainability reporting (standard-setting)", *Pacific Accounting Review*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/PAR-02-2022-0034>
- Di Vaio, A., Varriale, L., Lekakou, M., & Stefanidaki, E. (2021). Cruise and container shipping companies: A comparative analysis of sustainable development goals through environmental sustainability disclosure. *Maritime Policy & Management*, 48(2), 184-212.
- Dooms, M. (2019). "Stakeholder Management for Port Sustainability: Moving from Ad-Hoc to Structural Approaches." In *Green Ports: Inland and Seaside Sustainable Transportation Strategies*, edited by R. Bergqvist and J. Monios, 1–17. MA: Elsevier.
- Ernst & Young (2020) *The EU Taxonomy and implications for your business* brief.
- Eccles, R. G., Krzus, M. P., Rogers, J., & Serafeim, G. (2012). The need for sector-specific materiality and sustainability reporting standards. *Journal of applied corporate finance*, 24(2), 65-71.
- ESRS (2022) Exposure Draft ESRS 1 General Principles. https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FSiteAssets%2FED_ESRS_1.pdf&AspxAutoDetectCookieSupport=1
- European Commission (2021). Sustainable Finance Package. Retrieved from https://finance.ec.europa.eu/publications/sustainable-finance-package_en
- European Commission (2020). Financing a sustainable European economy Technical Report. Retrieved from https://finance.ec.europa.eu/system/files/2020-03/200309-sustainable-finance-teg-final-report-taxonomy_en.pdf
- European Commission (2022). EU Taxonomy for sustainable activities. Accessed at https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en#preparatory
- External Reporting Board (2022a). Aotearoa New Zealand Standards: Climate-related disclosures framework consultation document. Retrieved from <https://xrb.govt.nz/standards/climate-related-disclosures/>

External Reporting Board (2022b). Statement of Intent 2022-27. Retrieved from <https://www.xrb.govt.nz/about-xrb/accountability-documents/>

Global Ocean Accounts Partnership (2022). What are ocean accounts? Accessed at <https://www.oceanaccounts.org/what-are-ocean-accounts/>

Global Reporting Initiative. (2020). *Why Report?* Retrieved from URL: <https://www.globalreporting.org/how-to-use-the-gri-standards/>

Global Reporting Initiative. (2021). *EFRAG and GRI to co-construct a biodiversity standard*. Retrieved from <https://www.globalreporting.org/news/news-center/efrag-and-gri-to-co-construct-biodiversity-standard/>

Global Reporting Initiative (GRI) (2022a) The GRI Perspective 3 – the materiality madness. Retrieved from <https://globalreporting.org/search/?query=materiality>

Global Reporting Initiative (GRI) (2022b). Sector standard for agriculture, aquaculture, and fishing. Retrieve from <https://www.globalreporting.org/standards/standards-development/sector-standard-for-agriculture-aquaculture-and-fishing/>

Global Reporting Initiative (GRI) (2022c). GRI 13: Agriculture, Aquaculture and Fishing Sectors 2022 FAQ. Retrieved from <https://www.globalreporting.org/search/?query=GRI+13>

Hörisch, J., Johnson, M.P., & Schaltegger, S. 2014. 'Implementation of Sustainability Management and Company Size: A Knowledge-Based View.' *Business Strategy and the Environment*, vol. 24, no. 8, pp. 765-779. Available from: Wiley Online Library.

IFRS Foundation (2022a). Who we are: About us. Retrieved from <https://www.ifrs.org/about-us/who-we-are/>

IFRS Foundation (2022b). General sustainability-related disclosures. Retrieved from <https://www.ifrs.org/projects/work-plan/general-sustainability-related-disclosures/>

IPBES. (2019). The global assessment report on biodiversity and ecosystem services: Summary for policymakers. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. https://ipbes.net/sites/default/files/inline/files/ipbes_global_assessment_report_summary_for_policymakers.pdf

KPMG (2020) The time has come, The changing face of reporting in New Zealand: KPMG New Zealand's survey of sustainability reporting 2020. Retrieved from <https://assets.kpmg/content/dam/kpmg/nz/pdf/2020/12/the-time-has-come-nz.pdf>

Lirn, T. C., Lin, H. W., & Shang, K. C. (2014). Green shipping management capability and firm performance in the container shipping industry. *Maritime Policy & Management*, 41(2), 159-175.

MacNeil, J. L., Adams, M., & Walker, T. R. (2021). Development of framework for improved sustainability in the Canadian Port Sector. *Sustainability*, 13(21), 11980.

Ministry for Business, Innovation and Employment (MBIE) (2022). Consultation on modern slavery and worker exploitation. Retrieved from <https://www.mbie.govt.nz/have-your-say/modern-slavery/>

Ministry for Business, Innovation and Employment (MBIE) (2019). Defining small business: recommendations of the New Zealand small business council for the minister of small business. Accessed via <https://www.mbie.govt.nz/assets/defining-small-business.pdf>

Meech, D. & Bayliss (2021) International developments in sustainability reporting. MBIE. <https://www.mbie.govt.nz/dmsdocument/15110-international-developments-in-sustainability-reporting-pdf>

Ministry of Business, Innovation and Employment (2022). Small Business. Accessed at <https://www.mbie.govt.nz/business-and-employment/business/support-for-business/small-business/>

Moberg, E., Selwyn, M., Rhatigan, A. (2022). Setting science-based targets in the seafood sector: best practices to date. Retrieved from

- https://files.worldwildlife.org/wwfcmprod/files/Publication/file/8cn3jb0kvv_Seafood_Guide_20220329_v3.pdf
- Naik, G. (2021). Companies, investors face new pressure from compulsory disclosure of climate risk. Accessed at <https://www.spglobal.com/esg/insights/companies-investors-face-new-pressure-from-compulsory-disclosure-of-climate-risk>
- Natural Capital Coalition. 2016. "Natural Capital Protocol". (Online) Available at: www.naturalcapitalcoalition.org/protocol
- New Zealand Parliament (2021). Financial Sector (Climate-related Disclosures and Other matters) Amendment Bill. Retrieved from https://www.parliament.nz/en/pb/bills-and-laws/bills-proposed-laws/document/BILL_109905/financial-sector-climate-related-disclosures-and-other
- Ngāti Hauā Iwi Trust (2020) Annual Report. Accessed at <https://ngatihauaiwitrust.co.nz/publications/annual-report/>
- Nicolson, R., Banyasz, D., Turnbull, E., McAvaney, H., Lampe, N., & Percy, G. (2020). Tracking the modern slavery landscape: recent developments. Retrieved from URL: <https://www.allens.com.au/insights-news/insights/2020/09/tracking-the-modern-slavery-landscape-recent-developments/>
- Northrop, E., Schuhmann, P., Burke, L., Fyall, A., Alvarez, S., Spenceley, A., Becken, S., Kato, K., Roy, J., Some, S., Veitayaki, J., Markandya, A., Glarraga, I., Greno, P., Ruiz-Gauna, I., Curnock, M., Epler Wood, M., Yue Yin, M., Riedmiller, S., Carter, E., Haryanto, R., Holloway, E., Cores, R., Ridderstaat, J., Godovykh, M. (2022) Opportunities for transforming coastal and marine tourism: towards sustainability, regeneration and resilience. High Level Panel for A Sustainable Ocean Economy. <https://oceanpanel.org/opportunity/sustainable-coastal-marine-tourism/>
- Notteboom, T., F. Parola, G. Satta, and L. Penco. 2015. "Disclosure as a Tool in Stakeholder Relations Management: A Longitudinal Study on the Port of Rotterdam." *International Journal of Logistics Research and Applications* 18 (3): 228–250. doi:10.1080/13675567.2015.1027149.
- Peterdy, K. (2022) ESG (Environmental, Social and Governance) A framework for understanding and measuring how sustainably an organisation is operating. Corporate Finance Institute. <https://corporatefinanceinstitute.com/resources/knowledge/other/esg-environmental-social-governance/>
- Raukawa Settlement Trust (2021). Annual Report. Accessed <https://raukawa.org.nz/wp-content/uploads/2021/12/Web-Raukawa-Annual-Report-Proof-V5.pdf>
- Rojas-Nazar UA, Cornelisen C & Hall J (2022). User guide: Tools for ecosystem-based management. Sustainable Seas National Science Challenge
- Rout, M., Lythberg, B., Mika, J. P., Gillies, A., Bodwitch, H., Hikuroa, D., Awatere, S., Wiremu, F., Rakena, M., Reid, J. (2019). Kaitiaki-centred business models: Case studies of Māori marine-based enterprises in Aotearoa New Zealand. Wellington, New Zealand: Sustainable Seas National Science Challenge.
- Sanford (2021). Annual Report. Available at <https://www.sanford.co.nz/sustainability/>
- Science Based Targets (2021a). SBTi Corporate Manual (TVT-INF-002, version 2.0). Retrieved from <https://sciencebasedtargets.org/resources/?tab=develop#resource>
- Science Based Targets (2021b). How-to guide for setting near-term targets (TVT-INF-001, version 2.0). Retrieved from <https://sciencebasedtargets.org/resources/?tab=develop#resource>
- Science Based Targets Network (no date). Public consultation on technical guidance for companies. Accessed at <https://sciencebasedtargetsnetwork.org/resources/sbntn-public-consultation-2022/>
- Stockholm Resilience Centre (2020). A safe operating space for New Zealand/Aotearoa: Translating the planetary boundaries framework. Accessed at

<https://www.stockholmresilience.org/download/18.66e0efc517643c2b810218e/1612341172295/Updated%20PBNZ-Report-Design-v6.0.pdf>

Sustainable Seas (2022a). Blue Economy. Accessed at <https://www.sustainableseaschallenge.co.nz/our-research/blue-economy/>

Sustainable Seas (2022b). Indigenising the Blue Economy. Accessed at <https://www.sustainableseaschallenge.co.nz/our-research/indigenising-the-blue-economy/>

Sustainable Seas (2018) Developing ecosystem-based management principles for NZ. Accessed at <https://www.sustainableseaschallenge.co.nz/news-and-events/news/developing-ecosystem-based-management-principles-for-nz/>

System of Environmental Economic Accounting (2022). Frequently asked questions. Accessed at <https://seea.un.org/es/content/frequently-asked-questions>

Task Force on Nature-related Financial Disclosures (2022). Draft Framework - Beta v0.2 June 2022 version. Retrieved from <https://framework.tnfd.global/>

UNESCO-IOC/European Commission. 2021. MSPglobal International Guide on Marine/Maritime Spatial Planning. Paris, UNESCO. (IOC Manuals and Guides no 89)

United Kingdom Treasury (2021) Greening Finance: A roadmap to Sustainable Investing. Retrieved from <https://www.gov.uk/government/publications/greening-finance-a-roadmap-to-sustainable-investing>

U.S. Securities and Exchange Commission (2022a). SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors. Retrieved from <https://www.sec.gov/news/press-release/2022-46>

U.S. Securities and Exchange Commission (2022b). Fact Sheet: Enhancement and standardization of climate-related disclosures. Retrieved from <https://www.sec.gov/files/33-11042-fact-sheet.pdf>

Wakatū (2022). Whenua Ora. Accessed at <https://www.wakatu.org/whenua-ora>

Whieldon, E., Almtoft, A., & Olufunwa, A. (2022). Climate disclosures are increasing in the US but still far from what the SEC has proposed. Retrieved from <https://www.spglobal.com/esg/insights/climate-disclosures-are-increasing-in-the-us-but-still-far-from-what-the-sec-has-proposed>

Wollmert, P. & Hobbes, A. (2022). Sustainability reporting: what to know about the new EU rules?. Ernst & Young. Accessed at https://www.ey.com/en_no/assurance/how-the-eu-s-new-sustainability-directive-will-be-a-game-changer

World Economic Forum and PwC (2020). Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy. Retrieved from <https://www.wbcsd.org/Programs/Food-and-Nature/Food-Land-Use/Resources/New-Nature-Economy-Series-Chapter-1-Nature-Risk-Rising#:~:text=The%20World%20Economic%20Forum%E2%80%99s%20%28WEF%29%20%E2%80%9CNature%20Risk%20Rising%3A,highlights%20the%20materiality%20of%20nature-related%20risks%20for%20businesses.>

World Benchmarking Alliance (2022). Seafood Stewardship Index Methodology. Retrieved from <https://www.worldbenchmarkingalliance.org/publication/seafood-stewardship-index/methodology/>

WWF (2022). Living Planet Report 2022. Retrieved from https://wwfnz.awsassets.panda.org/downloads/lpr_2022_full_report.pdf

XRB (2022). Statement of Intent 2022-27. Retrieved from <https://www.xrb.govt.nz/about-xrb/accountability-documents/>

Yeoman, R., Fairgray, D., and Lin, B. (2019). Measuring New Zealand's Blue Economy. Market Economics Consulting & Sustainable Seas. Retrieve from: [Measuring20New20Zelands20Blue20Economy202019_Final.pdf \(sustainableseaschallenge.co.nz\)](https://www.sustainableseaschallenge.co.nz/Measuring20New20Zelands20Blue20Economy202019_Final.pdf)

Yigit, K., and B. Acarkan. 2018. "A New Electrical Energy Management Approach for Ships Using Mixed Energy Sources to Ensure Sustainable Port Cities." *Sustainable Cities and Society* 40: 126–135. doi:10.1016/j.scs.2018.04.004.