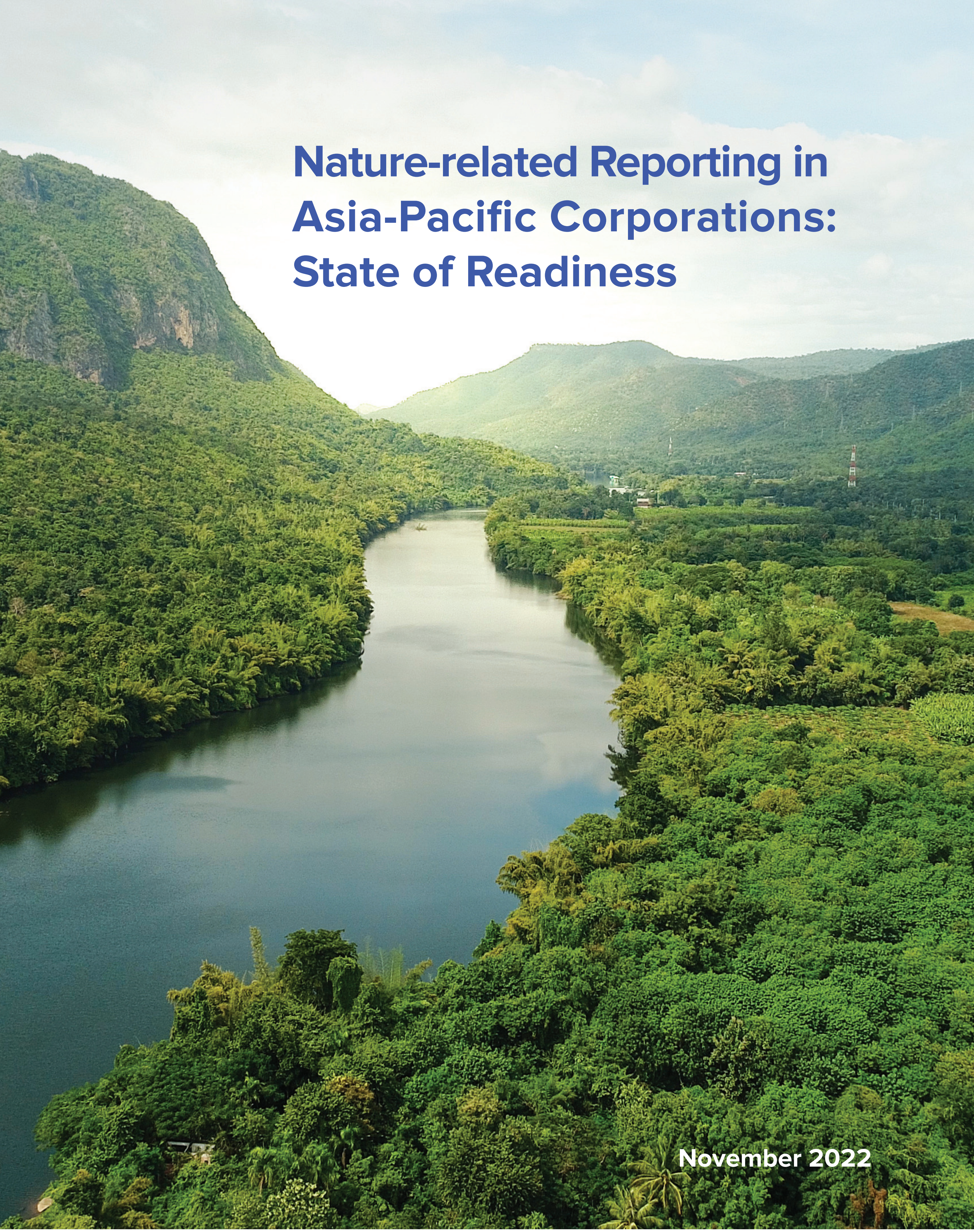
Nature-related Reporting in Asia-Pacific Corporations: State of Readiness



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Nature-related Reporting in Asia-Pacific Corporations: State of Readiness

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About Centre for Governance and Sustainability, NUS Business School

The Centre for Governance and Sustainability (CGS), formerly known as Centre for Governance, Institutions and Organisations (CGIO), was established by the National University of Singapore (NUS) Business School in 2010.

It aims to spearhead relevant and high-impact research on corporate governance (CG) and corporate sustainability (CS) issues that are pertinent to institutions, government bodies and businesses both in Singapore and Asia-Pacific. This includes corporate governance and corporate sustainability, governance of family firms, government linked companies, business groups, and institutions. CGS also organises events such as public lectures, industry roundtables, and academic conferences on topics related to governance and sustainability.

CGS is the national assessor for the corporate sustainability and corporate governance performance of listed companies in Singapore. More information about CGS can be accessed at https://bschool.nus.edu.sg/cgs/

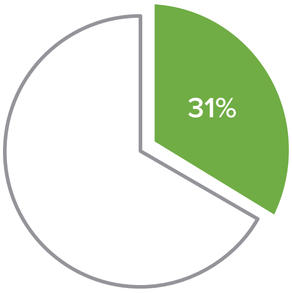
Executive Summary

Nature underpins all economic activities and human well-being. It is the world's most valuable asset yet significantly under-addressed in the climate conundrum. As corporations grapple with the enormity of the challenges towards achieving a net-zero world, equal effort is required in addressing our impacts on nature given its inextricable links. Our forests, oceans, marshes, and peatlands are the most effective natural carbon sinks contributing to the fight against climate change. With the rise of astute green investors and eco-conscious consumers, the spotlight is on corporations to not only reduce harm to the natural ecosystems but contribute to restoration works through clearly outlined strategies that are supported by tangible actions.

In this study, we seek to understand the state of nature-related reporting in Asia-Pacific companies. We focused on the top 50 listed companies by market capitalisation across 13 jurisdictions in Asia-Pacific, namely: Australia, China (mainland), Hong Kong, India, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, Taiwan, Thailand, Vietnam. The companies are identified as those listed in the respective stock exchanges, i.e., Australian Securities Exchange, Shanghai Stock Exchange, Hong Kong Stock Exchange, Bombay Stock Exchange, Indonesia Stock Exchange, Tokyo Stock Exchange, Bursa Malaysia, New Zealand's Exchange, Philippine Stock Exchange, Singapore Exchange, Taiwan Stock Exchange, Stock Exchange of Thailand, and the Ho Chi Minh City Stock Exchange.

To analyse the state of nature-related reporting in Asia-Pacific, we examined how the 650 companies reported on the following six key areas: reporting frameworks, materiality, governance, strategy, risk management, metrics and targets. In the development of the nature-related reporting framework used to evaluate the completeness of the companies' nature disclosures, we drew on the Global Reporting Initiative (GRI), the Taskforce on Nature-related Financial Disclosures (TNFD), the Science Based Target for Nature (SBTN), the Climate Disclosures Standards Board (CDSB), the International Union for Conservation of Nature (IUCN), The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the Organisation for Economic Co-operation and Development (OECD), Network for Greening the Financial system (NGFS), and the United Nations Sustainable Development Goals (SDG).

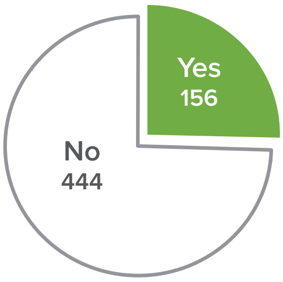
Key Findings



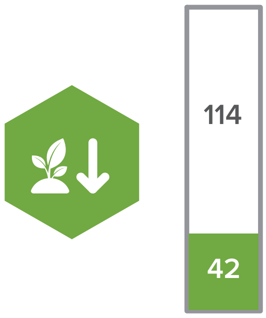
31% - The overall nature disclosure rate across 13 jurisdictions

410 companies reported on nature/biodiversity

A mere 6% (33 companies) declared commitment to biodiversity by setting bold targets such as net gain or no net loss in biodiversity for their future operations



156 companies included nature/biodiversity in their materiality analysis

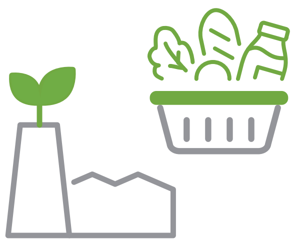


However, 42 out of the 156 companies included nature/biodiversity in their materiality map only to illustrate that it is less important in comparison to other material topics

Nature/biodiversity is a top priority issue only for 28% of the companies

Japan and Australia are the region's most active conservationists

No observation of any company completing a biodiversity audit for its value chain; therefore, the full scope of business impacts are not accounted for



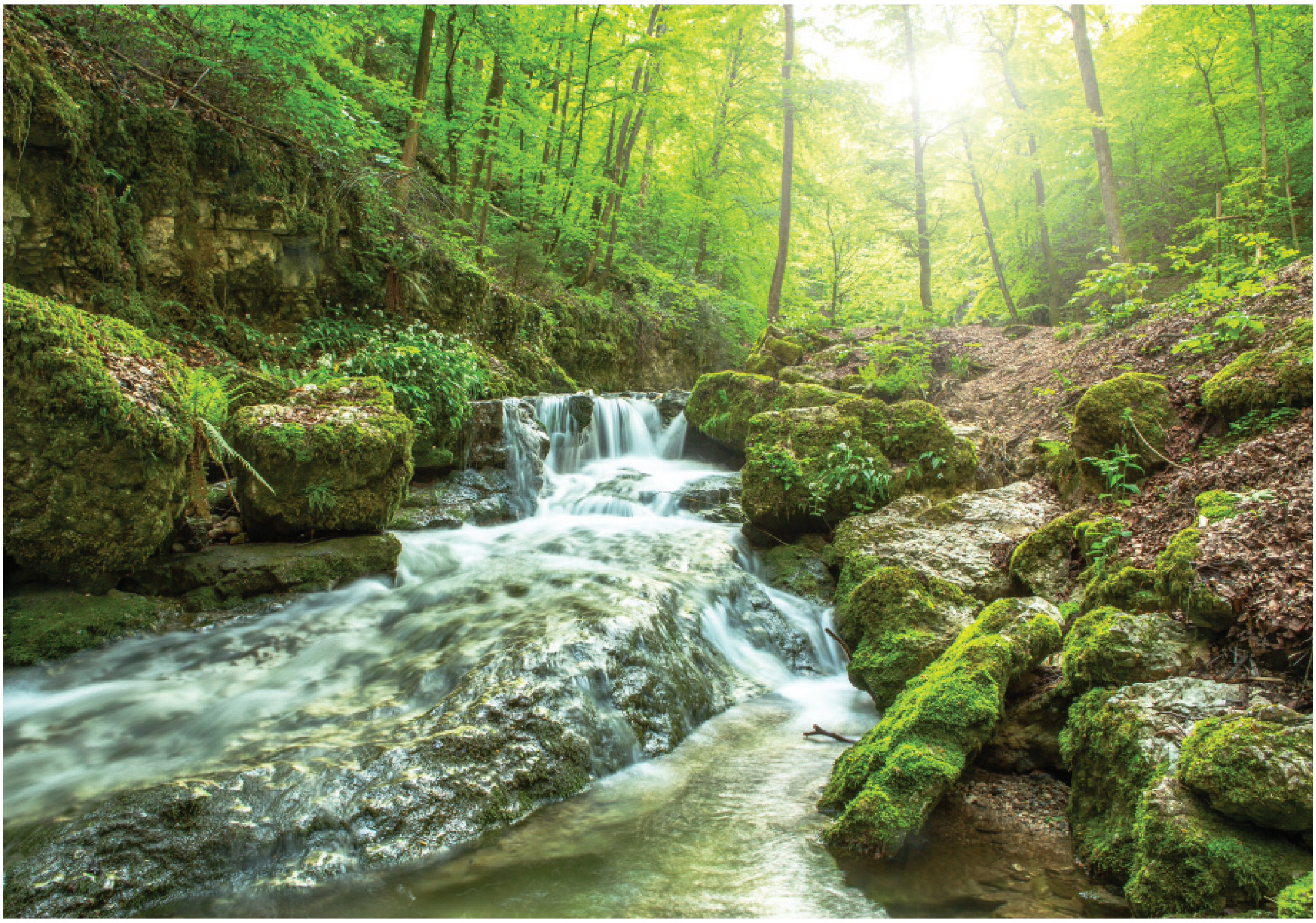
Asia-Pacific's Industrial and consumer staples companies are the most nature-conscious, healthcare firms the least

Topics with the highest disclosure rate across the five key components (Materiality, governance, strategy, risk management, metrics and targets)

- Board’s oversight on nature-related risks and opportunities
- Organisation’s interactions with low integrity ecosystems, high importance ecosystems or areas of water stress
- Material topics related to nature or biodiversity

Topics with the lowest disclosure rate across the five key components (Materiality, governance, strategy, risk management, metrics and targets)

- The nature-related risks and opportunities the organisation has identified over the short, medium, and long term
- The impact of nature- related risks and opportunities on the organisation’s businesses, strategy, and financial planning
- The resilience of the organisation’s strategy, taking into consideration different scenarios



Introduction

More than half of global output, valued at USD 44 trillion per year, is inextricably dependent on nature (Planet Tracker, 2022). Despite our natural environment being the core source and provider for human sustenance and thriving economies; nature today is faced with unprecedented challenges. Habitat degradation, invasive species, fragmentation, and overexploitation, combined with the interwoven externalities of climate change are critically undermining the region's biodiversity (United Nations Environment Programme, 2018). The reliance on natural capital in the face of declining biodiversity means that nature-related risks are engendering profound direct and indirect risks on businesses, and companies might be inadequately accounting for them.

Investors and stakeholders are demanding transparent information regarding the long-term value creation strategies of companies and its greater impact on society. They are also demanding consistent, trusted, and comparable sustainability disclosures (PwC & CGS, NUS Business School, 2022). For these reasons, the underlying approach of nature reporting and disclosure is imperative. As governments in the Asia-Pacific step up as proponents to drive the adoption of renowned sustainability frameworks such as the GRI and TCFD, nature-reporting which carries the same weight is anticipated to mirror a similar growth trajectory and uptake.

Nature-positive development opportunities in the Asia-Pacific region are valued at USD 4.3 trillion and can rise to over 230 million jobs by 2030 (Temasek, AlphaBeta, & World Economic Forum, 2021). As we anticipate the COP 15 held in Montreal, Canada, it would be interesting to observe how global leaders respond to the ambitious Post-2020 Global Biodiversity Framework to halt and reverse the alarming loss of biodiversity. The world is running a crippled race towards net zero unless we strive towards nature positive, in tandem, then we are at the precipice of change.

An Overview of Nature-related Reporting and Sustainability Reporting Requirements across Asia-Pacific

Sustainability reporting requirements continue to expand across most jurisdictions in Asia-Pacific although the requirements are tailored to each jurisdiction. There is currently no common nature reporting framework as the Science Based Targets for Nature (SBTN) and the Taskforce on Nature-related Financial Disclosures (TNFD) are both in development. However, the GRI Standards and TCFD recommendations are the preferred sustainability standard and framework espoused or mandated by the various jurisdictions (PwC & CGS, NUS Business School, 2022). The Asia-Pacific jurisdictions covered in this report are Australia, China (mainland), Hong Kong, India, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, Taiwan, Thailand, and Vietnam.

Table 1. Nature-related / Sustainability Reporting Requirements

Jurisdiction	Present	Upcoming
Australia	• There is currently no compulsory sustainability reporting. • However, corporate governance codes recommend disclosure of environmental and social risks for publicly listed companies (PLCs). • Various regulatory bodies, such as the Australian Securities and Investments Commission and the Australian Prudential Regulatory Authority have also indicated that material climate risks should be identified and disclosed. • Australian legal requirements require certain entities to disclose non-financial information related to specific federal acts, such as the Modern Slavery Act, the Workplace Gender Equality Act, or the National Greenhouse and Energy Reporting Act.	• Australian Sustainable Finance Initiative (supported by APRA and ASIC) issued the Australian Sustainable Finance Roadmap in 2020, listing out 37 recommendations across different timeframes. • With international mandates coming into force on corporate sustainability reporting and increasing trends in the financial sector favouring responsible investing, it is likely that demand for regulation will increase. • The Australian Accounting Standards Board (AASB) has added sustainability reporting to its work program and recently issued a request for comment on the ISSB's exposure drafts.

China (mainland)	• China Securities Regulatory Commission (CSRC) announced new guidelines in June 2021 for PLCs to add 'Environmental and Social Responsibility' sections in their half year and annual reports. This includes:
	  • Disclosure of actions to prevent pollution of air, water, and soil
	  • Methods for managing waste
	  • Reporting environmental incidents, especially if penalties are involved
	  • Reporting of ESG risks, narrative only (the rules provide no metrics for ESG risk)
		• Compulsory ESG reporting guide for A-share publicly traded companies is expected to be released around the end of 2022.
		• Announced in January 2022, the Shanghai Stock Exchange issued new guidance for Kechuang 50 index companies, requiring the 50 component companies to issue social responsibility reports. The companies shall issue their social responsibility report together with their annual report, and the report shall focus on disclosure related to "carbon peak carbon neutrality" goals and actions to promoting sustainable development.

Jurisdiction	Present	Upcoming
China (mainland)	• CSRC encourages companies to voluntarily report their carbon emissions, carbon reduction measures, impacts on biodiversity, risk posed by social issues, poverty alleviation and rural revitalisation. • CSRC made no reference to ESG frameworks, but it is expected to work closely with international organisations on developing global standards. The most used and globally recognised reporting framework is GRI. • In December 2021, the Ministry of Ecology and Environment of China released the "Measures on the Management of Environmental Information Disclosure for Companies" regulation which has come into force on 8 February 2022. The measures apply to key pollutant emission sources/corporates and companies with requirements for clean production audit. • Some local authorities, such as those in Shanghai and Shenzhen, have also issued guidance on corporate sustainable development and social responsibility.	
Hong Kong	• Hong Kong Stock Exchange (HKEX) listing rules include the ESG Reporting Guide. There are two levels of disclosure obligations: (a) 'comply or explain' provisions; and (b) recommended disclosures that are encouraged, but not required to report. • The largest update, effective for financial years commencing on or after 1 July 2020, requires companies to disclose additional ESG information. • From 2021, there are more than 30 specific ESG key performance indicators (KPIs) to be reported on a 'comply or explain' basis per the ESG Reporting Guide. • HKEX requires the listed companies to include ESG-related risks in the enterprise risk management assessment with effect from 1 January 2022. In the Board's annual review on the effectiveness of risk management and internal control system and continuous monitoring of material risks, ESG risks will need to be included and be considered.	• In May 2019, the Hong Kong Monetary Authority (HKMA) announced important measures to promote the development of green and sustainable banking in three phases. In December 2020, the HKMA announced plans to mandate TCFD across relevant sectors no later than 2025. • HKEX is expected to conduct a consultation on how to implement ISSB requirements in Hong Kong and it is expected to conclude in 2023.

Jurisdiction	Present	Upcoming
India	• Requirement to prepare Business Responsibility Report (BRR) in respect of reporting on ESG for top 1,000 listed entities by market capitalisation.	• New ESG reporting requirements known as the Business Responsibility and Sustainability Report (BRSR) disclosures, include nine principles of the 'National Guidelines on Responsible Business Conduct' (NGRBCs). • Voluntary for FY 2021-2022 and mandatory for FY 2022-2023, applicable to top 1,000 listed companies. • Disclosure requirements on environment aspect: a) Resource usage (energy and water) and intensity metrics b) Air pollutant emissions c) Greenhouse gas emissions (Scope 1, Scope 2, and Scope 3) d) Waste generated and waste management practices e) Impact on biodiversity • Existing reporting based on internationally accepted reporting frameworks (GRI, SASB, TCFD or Integrated Reporting) may cross-reference disclosures to BRSR. • The BRSR aims to have standardised quantitative and qualitative disclosures on ESG parameters to enable comparability across companies, sectors, and time.
Indonesia	• Otoritas Jasa Keuangan (OJK) requires PLCs to publish sustainability reporting through POJK 51/POJK.03/2017, gradually starting in 2020. • There are nine principles of sustainable finance that should be implemented by PLCs. • Details of sustainability reports are stipulated under SEOJK 16/ SEOJK.04/2021 and include sustainability governance and performance. The sustainability performance covers: • Green environment (energy, emission, waste, & biodiversity)	• Indonesia Stock Exchange (IDX) became a TCFD supporter in June 2021 as part of its ambition to support sustainability in Indonesia's capital market. • In 2021, GRI signed a collaboration agreement with the Indonesian government that commits to support and provide reporting frameworks for the country's UN SDG commitments. The new ESG guidance will make clear how companies can fulfil their disclosure requirements by connecting the GRI Standards with SDG targets and indicators.

Jurisdiction	Present	Upcoming
Japan	• Japan's 2018 Environmental Reporting Guidelines constitute a framework for international regulations, practical trends, and integrated environmental reporting. It requires reporting of both conventional environmental management information and forward-looking, non-financial data in relation to governance, risk management, and business management. The Guidelines include environmental reporting requirements, trends in key performance indicators (KPIs), and items to be reported. The first version was developed in 2000, and it has been updated in 2012 and 2018. • Japan's revised Corporate Governance Code additionally requires Prime Market listed companies to meet TCFD requirements after 4 April 2022.	• The Financial Services Agency (FSA) working group on corporate disclosures raised proposals for mandatory climate reporting and disclosure guidelines on sustainability and governance-related factors. Companies could be required to report on climate-related risks. • Sustainability Standards Board of Japan (SSBJ) is planned to be established to contribute to the development of international sustainability disclosure standards and to develop domestic sustainability disclosure standards by the end of June 2022.
Malaysia	• ESG reporting is required as a listing rule i.e., to disclose narrative statements of the management of material economic, environmental, and social (EES) risks and opportunities in annual reports. • There is no one consistent ESG framework mandated by Bursa Malaysia, although GRI remains the most popular. Bursa Malaysia issued a Sustainability Reporting Guide in 2015 and a second edition in 2018 to help embed sustainability in reporting. Compliance with the Guide is voluntary.	• In March 2022, Bursa Malaysia introduced a Consultation Paper on key proposals in relation to sustainability reporting e.g., requiring disclosure of prescribed sustainability matters and indicators aligned with TCFD recommendations. • Securities Commission Malaysia five-year Capital Market Masterplan 3 (2021) reinforces its commitment to climate action e.g., promoting greater transparency in the market through disclosures.
New Zealand	• PLCs have an obligation via corporate governance codes to provide non-financial disclosures relating to environmental, economic, and social sustainability factors and practices.	• TCFD reporting for large listed issuers and financial institutions to be mandatory for reporting years from 2023. This includes a requirement for external assurance on the GHG emissions component from 2024. • The Reserve Bank of New Zealand is developing its supervisory approach to include climate-related risks. • The External Reporting Board is working to develop an overarching ESG reporting framework, aligned with TCFD, for voluntary application in coming years.

Jurisdiction	Present	Upcoming
Philippines	• PLCs are required to report on their contributions to sustainability topics either through a sustainability report that adheres to internationally recognised sustainability reporting frameworks and standards or Securities and Exchange Commission's (SEC) reporting template. • The Sustainability Reporting Framework prescribed by the SEC is built on globally accepted standards and frameworks, particularly GRI Sustainability Reporting Standards, IIRC Integrated Reporting Framework, the SASB Sustainability Accounting Standards, and TCFD recommendations.	• The SEC followed a "comply and explain" approach from the 2019 reporting period. However, beginning 2023 (2022 reporting period), all PLCs are mandated to comply with the Sustainability Reporting Guidelines set by the regulator. The SEC is also seeking to introduce voluntary – and eventually mandatory – reporting for non-listed companies.
Singapore	• All Singapore Exchange listed companies to have sustainability reporting which requires 6 primary components of: • Material ESG factors • Climate-related disclosures consistent with the TCFD recommendations • Policies, practices, and performance • Targets • Sustainability reporting framework • Board statement and associated governance structure for sustainability practices	For Singapore listed companies: • Minimally subject the sustainability reporting process to internal or external review (effective from 2022) • From 2022, climate reporting is mandatory for all issuers on a 'comply or explain' basis. • From 2023, climate reporting is mandatory for issuers in (a) financial industry; (b) agriculture, food, and forest products industry; and (c) energy industry. For other issuers, climate reporting on a 'comply or explain' basis. From 2024, the (iv) materials and buildings, and (v) transportation industries must do the same. • Proposed core ESG factors (27 factors) (effective from 2022)
Taiwan	• Taiwan Stock Exchange Corporation Rules require listed and OTC companies to prepare Sustainability Reports (ESG reports) referring to the latest GRI Standards published by GRI. • Regulations governing ESG related disclosures in annual reports are updated to require more specific and quantitative data.	• Corporate Governance 3.0 – Sustainable Development Roadmap, for reports issued in 2023 relating the 2022 result, the thresholds for ESG reporting are reduced from capital stock no less than NT$5 billion to NT$2 billion. • In addition to existing ESG reporting requirements, ESG disclosures with reference to TCFD and SASB have also been added.

<table>
<tr><th>Jurisdiction</th><th>Present</th><th>Upcoming</th></tr>
<tr><td>Thailand</td><td>The Securities and Exchange Commission (SEC) Corporate Governance Code requires sustainability reporting with choices of framework, however GRI is common following Stock Exchange of Thailand (SET) guidance.
In 2022, it is mandatory for all PLCs to report their ESG performance via Form 56-1 One Report (effective from the financial period ended 31 December 2021). The submission must be within three months as from the end of the financial report.</td><td>On 17 November 2021, SET announced its support for the TCFD.
SET has provided knowledge about the impact of climate change on business by conducting a series of TCFD & SDGs workshops which aim to promote a better understanding of how to address the economic risks and opportunities resulting from climate change and raise the bar in line with the TCFD international best practice of climate disclosures.</td></tr>
<tr><td>Vietnam</td><td>The Ministry of Finance of Vietnam requires PLCs to take into account social and environmental consequences of their activities and their social commitments in their annual report. This includes:
Environmental impact (e.g., GHG emissions)
Raw materials management
Energy and water consumption
Compliance with environmental protection laws
Report on responsibility for local community
Report on green capital market activities
PLCs are encouraged to apply the globally accepted reporting and disclosure standards in preparing their sustainability reports.</td><td>No further developments noted.</td></tr>
</table>

How sustainability and nature reporting standards, frameworks and enablers are changing

The following section highlights the notable players of the sustainability reporting ecosystem including their respective background and mission:

Table 2. Nature Reporting Standards, Frameworks and Enablers

Organisation	Background / Mission	Type (see key)
GRI (Global Reporting Initiative)	The GRI was founded in 1997. The aim was to create the first accountability mechanism to ensure companies adhere to responsible environmental conduct principles, which was then broadened to include social, economic and governance issues. In 2000, the first version of GRI was launched to provide the first global framework for sustainability reporting. In 2016, GRI transitioned from providing guidelines to setting the first global standards for sustainability reporting with a multi-stakeholder audience - the GRI Standards.	Standards
UN SDG (United Nations Sustainable Development Goals)	These are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all." They were set by the UN General Assembly in 2015 and are intended to be achieved by 2030. These form targets/indicators and are often used in ESG reporting.	Enabler
TCFD (Taskforce on Climate-related Financial Disclosures)	Established in 2017, the TCFD published a reporting framework on the single issue of climate change setting out recommendations for companies to voluntarily disclose climate-related information to provide investors with more information on the financial impact of climate risk on a company. Although originally intended to be voluntary, in 2020, the governments of New Zealand and the UK became the first to mandate reporting of TCFD for implementation in the coming years. Finance ministers from the Group of Seven (G7) of the largest economies announced in June 2021 the intention to mandate TCFD reporting in their respective jurisdictions.	Single issue
TNFD (Taskforce on Nature-related Financial Disclosures)	The TNFD builds on the work of the TCFD and is expected to be delivered as a reporting framework in 2023. The TCFD is a climate-focused framework and therefore it covers a subset of nature-related risks, only through a climate lens. The TCFD's framework excludes other nature-related risks, such as plastics in the oceanic food chain and loss of soil fertility. The TNFD will build upon the structure and foundation of the TCFD, and harness synergies to avoid repetition. Over time, the two frameworks will be complementary. Finance ministers from the G7 have endorsed the TNFD.	Single issue (in progress)
SBTN (Science Based Target for Nature)	The Science Based Targets Network (SBTN) builds on the momentum of the Science Based Targets initiative (SBTi). It is a network of 45+ organizations - including the same organizations behind the SBTi - developing methods and resources for science-based targets (SBTs) for nature for companies, and science-based targets for both climate and nature for cities. Its goal is for the world's major companies and cities to have adopted science-based targets and acted for climate, which companies will continue to do through the SBTi, alongside water, land, ocean, and biodiversity by 2025. This will form a key part of progress towards Sustainable Development Goals (SDGs) and global policy milestones.	Single issue

Organisation	Background / Mission	Type (see key)
CDSB (Climate Disclosure Standards Board)	The CDSB Framework was launched in 2007 and sets out a voluntary approach for reporting environmental and climate change information in mainstream reports for the benefit of investors. It allows investors to assess the relationship between specific environmental matters and the organisation's strategy performance and prospects. The framework was updated in April 2018 to align with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and other key mainstream reporting requirements.	Single issue
IPBES (The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services)	IPBES is an independent intergovernmental body established by States to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development. It was established in Panama City, on 21 April 2012 by 94 Governments. It is not a United Nations body. However, at the request of the IPBES Plenary and with the authorization of the UNEP Governing Council in 2013, the United Nations Environment Programme (UNEP) provides secretariat services to IPBES.	Enabler
OECD (Organisation for Economic Co-operation and Development)	OECD is an international organisation that works to build better policies for better lives. It aims to shape policies that foster prosperity, equality, opportunity, and well-being for all. Together with governments, policy makers and citizens, OECD works on establishing evidence-based international standards and finding solutions to a range of social, economic, and environmental challenges. From improving economic performance and creating jobs to fostering strong education and fighting international tax evasion, we provide a unique forum and knowledge hub for data and analysis, exchange of experiences, best-practice sharing, and advice on public policies and international standard-setting.	Enabler
IUCN (International Union for Conservation of Nature)	Created in 1948, IUCN is now the world's largest and most diverse environmental network, harnessing the knowledge, resources and reach of more than 1,400 Member organisations and 15,000 experts. This diversity and expertise make IUCN the global authority on the status of the natural world and the measures needed to safeguard it. Working with many partners and supporters, IUCN implements a large and diverse portfolio of conservation projects worldwide. These projects combine the latest science with traditional knowledge of local communities to work to reverse habitat loss, restore ecosystems and improve people's well-being.	Enabler
NGFS (Network for Greening the Financial system)	At the Paris "One Planet Summit" in December 2017, eight central banks and supervisors established the NGFS. Since then, the membership of the Network has grown dramatically, across the five continents. The Network's purpose is to help strengthen the global response required to meet the goals of the Paris agreement and to enhance the role of the financial system to manage risks and to mobilize capital for green and low-carbon investments in the broader context of environmentally sustainable development. To this end, the Network defines and promotes best practices to be implemented within and outside of the Membership of the NGFS and conducts or commissions analytical work on green finance.	Single issue

Enabler: Organisation working for sustainable corporate behaviours that impact reporting
Standards: What should be reported for each ESG topic
Single issue: A standard / framework / measurement protocol that is focused on a single ESG issue

Scope of Study

This study focuses on the top 50 listed companies by market capitalisation across 13 jurisdictions in Asia-Pacific, namely: Australia, China (mainland), Hong Kong, India, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, Taiwan, Thailand, Vietnam. The corporations are identified as those listed in the respective stock exchanges, i.e., Australian Securities Exchange, Shanghai Stock Exchange, Hong Kong Stock Exchange, Bombay Stock Exchange, Indonesia Stock Exchange, Tokyo Stock Exchange, Bursa Malaysia, New Zealand's Exchange, Philippine Stock Exchange, Singapore Exchange, Taiwan Stock Exchange, Stock Exchange of Thailand, and the Ho Chi Minh City Stock Exchange.

The information reviewed was based on the latest sustainability reports available from 2022 and 2021. Only companies whose sustainability reports are communicated in English are included. A total of 650 listed companies' sustainability reports were analysed. Of these 650 top Asia-Pacific companies, 410 companies had disclosures related to nature and/or biodiversity.

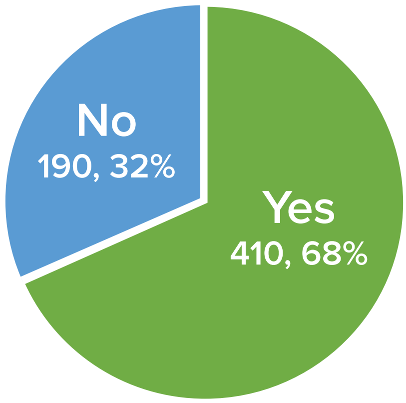


Figure 1. Top Asia-Pacific Companies Disclosure on Nature and Biodiversity

Research Framework

In evaluating the performance in nature reporting, we drew on the Global Reporting Initiative (GRI), the Taskforce on Nature-related Financial Disclosures (TNFD), the Science Based Target for Nature (SBTN), the Climate Disclosures Standards Board (CDSB), the International Union for Conservation of Nature (IUCN), The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the Organisation for Economic Co-operation and Development (OECD), Network for Greening the Financial system (NGFS), and the United Nations Sustainable Development Goals (SDG) to synthesise a framework that evaluates the completeness of the companies' nature disclosures.

The nature-related reporting framework used in the analysis covers six key areas: reporting frameworks, materiality, governance, strategy, risk management, metrics and targets. Companies were evaluated on a varying number of indicators in each of the six key areas and they were awarded one if they disclosed that indicator, and zero otherwise. Scores were summed up to obtain the level of disclosure for each of the six key areas.

Table 3. Nature-related Reporting Assessment Framework

Reporting Frameworks	• United Nations Sustainable Development Goals (UNSDG) • Taskforce on Climate-related Financial Disclosures (TCFD) • Taskforce on Nature-related Financial Disclosures (TNFD) • Science Based Target for Nature (SBTN) • Climate Disclosures Standards Board (CDSB) • Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) • Organisation for Economic Co-operation and Development (OECD) • International Union for Conservation of Nature (IUCN)
Materiality	• Nature or biodiversity is listed as a material issue • Nature or biodiversity is briefly mentioned
Governance	• Describe the board's oversight of nature-related risks and opportunities • Describe management's role in assessing and managing nature-related risks and opportunities
Strategy	• Describe the impact of nature-related risks and opportunities on the organisation's businesses, strategy and financial planning • Describe the nature-related risks and opportunities the organisation has identified over the short, medium, and long term • Describe the organisation's interactions with low integrity ecosystems, high importance ecosystems or areas of water stress • Describe the resilience of the organisation's strategy, taking into consideration different scenarios
Risk management	• Describe the organisation's processes for identifying and assessing nature-related risk • Describe the organisation's processes for managing nature-related risks • Describe how processes for identifying, assessing, and managing nature-related risks are integrated into the organisation's overall risk management
Metrics and Targets	• Disclose the metrics used by the organisation to assess and manage nature-related risks and opportunities in line with its strategy and risk management process • Describe the targets used by the organisation to manage nature-related risks and opportunities and performance against targets

State of Nature-related Reporting Practices in Asia-Pacific - frameworks, guidelines, and targets

	Count of Companies	TCFD	SDG	IUCN	OECD	TNFD	SBTN	CDSB	IPBES
		Taskforce on Climate Related Financial Disclosures	SDG - 14 Life below Water SDG 15 - Life on Land	International Union for Conservation of Nature	Organisation for Economic Co-operation and Development	Taskforce on Nature Related Financial Disclosures	Science Based Targets for Nature	Climate Disclosure Standards Board	The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
Overall	**600**	**293**	**214**	**95**	**87**	**19**	**13**	**8**	**2**
Australia	48	34	15	6	3	6	4	0	0
China (mainland)	44	15	11	0	3	1	1	0	0
Hong Kong	47	25	17	6	4	0	3	1	0
India	41	16	19	11	6	0	3	2	0
Indonesia	48	6	18	12	2	1	1	0	0
Japan	48	41	23	8	22	1	0	1	1
Malaysia	48	29	23	14	4	0	0	1	0
New Zealand	49	22	8	2	3	0	0	1	0
Philippines	46	20	26	12	7	3	0	0	0
Singapore	48	27	8	9	4	3	0	1	0
Taiwan	47	31	17	2	13	2	1	1	1
Thailand	47	26	23	12	9	2	0	0	0
Vietnam	39	1	6	1	7	0	0	0	0

Table 4. Nature-related Reporting Framework across Jurisdictions

There is currently no common nature reporting framework as the Science-based Targets for Nature (SBTN) and the Taskforce for Nature-related Financial Disclosures (TNFD) are both in development. The largest companies in Asia-Pacific with nature-related disclosures most integrated the TCFD, SDGs, IUCN, and OECD guidelines.

In the context of the Sustainable Development Goals, companies commonly support SDG 14 - Life below water, by conserving marine resources and protecting the marine ecological environment. Conservation of marine resources commonly involves preventing illegal fish farming and protecting marine life. Meanwhile, marine ecological protection typically entails responsible operational interaction with the ecosystem and public engagement through marine education campaigns. Similarly, companies commonly contribute to SDG 15 - Life on land, by conserving terrestrial ecosystems and resources. Typically, companies disclose their efforts in minimising the impact of their land use through site remediation and rehabilitation of disturbed areas, while others take part in protecting flora and fauna to preserve native biodiversity. In addressing the needs of our planet, SDG 6 - Clean Water and Sanitation, and SDG 13 - Climate Action are equally relevant. Collectively, these are the four biosphere goals from the United Nations SDGs which are pivotal to securing and building truly sustainable economies.

As TNFD was set out to build upon the approach adopted by the TCFD, the high adoption rate for TCFD signifies propitious opportunities for the road-testing of the TNFD beta frameworks. Noteworthily, a handful of corporations had explicitly outlined their intention to embark on the TNFD and SBTN when the frameworks are launched. Among companies that acknowledge the OECD, common practices include referencing OECD guidelines such as the guidelines for multinational enterprises or due diligence guidance for responsible supply chains of minerals from conflict-affected and high-risk areas. Corporations striving to protect biodiversity also paid attention to the IUCN. They are committed to avoid operating in IUCN protected areas or engaging in activities which might disturb the IUCN red list threatened species.

Materiality

Report on nature/biodiversity			410
Does not report on nature/biodiversity			**190**
Australia	31	New Zealand	28
China (mainland)	23	Philippines	37
Hong Kong	30	Singapore	31
India	26	Taiwan	33
Indonesia	25	Thailand	40
Japan	45	Vietnam	20
Malaysia	41		

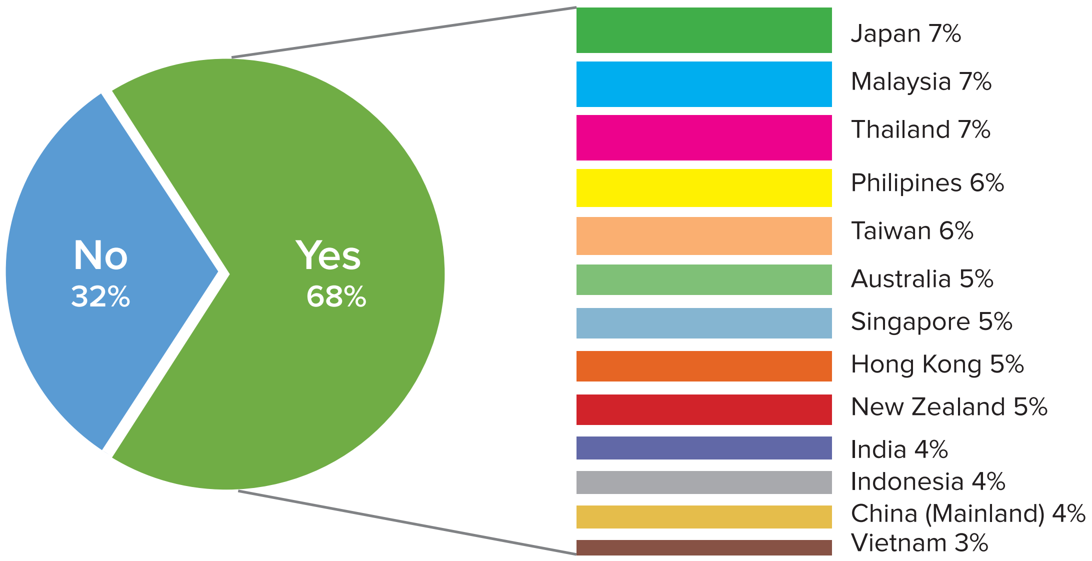


Figure 2. Nature Disclosure across Jurisdictions

In ascertaining whether corporations viewed nature as a priority, we examined if the 1.) companies disclosed nature/biodiversity as material issue, or 2.) if nature/biodiversity are briefly mentioned in the sustainability report. Based on a preliminary screening of the largest 650 Asia-Pacific companies in the 13 jurisdictions covered in this study, 410 companies have made nature-related disclosures.

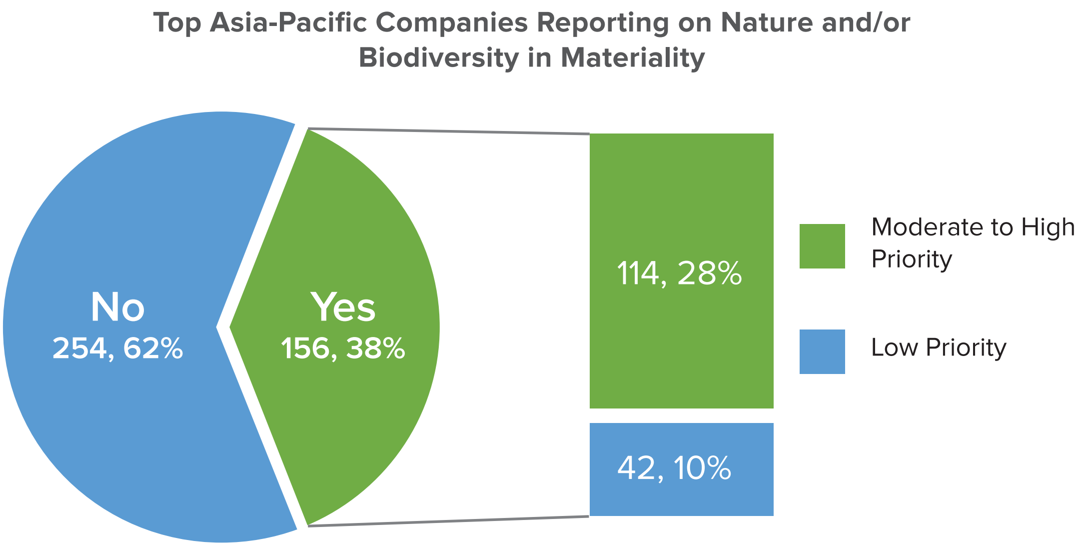


Figure 3. Materiality (Nature/Biodiversity)

At first glance, 156 (38%) companies highlighted nature/biodiversity within its materiality analysis, but a closer look at its level of priority revealed that approximately one-third of these companies had included nature/biodiversity only to illustrate a comparison that nature/biodiversity is low priority when considered alongside more important materiality issues. In other words, nature and biodiversity are not viewed with the same level of importance as interwoven issues such as climate change, energy, and circular economy. To provide a comparison of the state of nature-related reporting in the region, we sought to gain further insights from the 410 Asia-Pacific companies with nature disclosures.

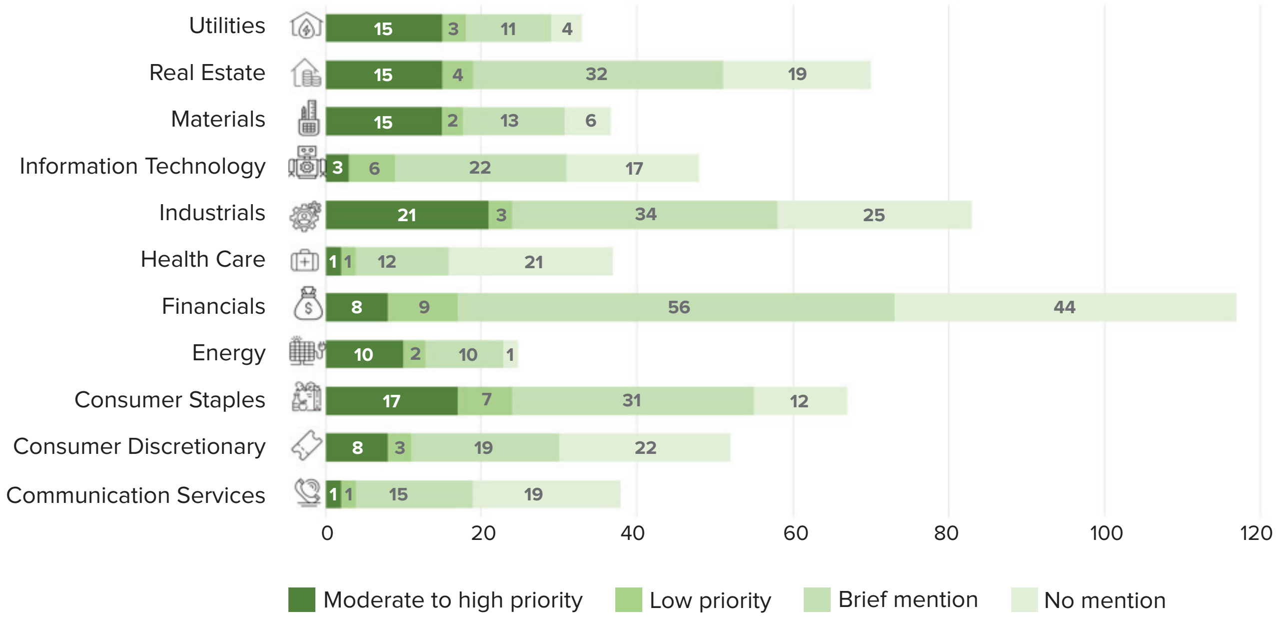


Figure 4. Breakdown by Sector

An analysis of the 11 industry sectors across Asia-Pacific revealed varying degree of commitment towards nature. By no surprise, corporations in the industrial and consumer staples sector were better attuned to nature and biodiversity, as these sectors are heavily dependent on nature for raw materials. It is reassuring that the top 2 most disclosed topics found in both sectors were sustainable sourcing and water use. Further to this, the topic of pollution control surfaced in the industrial sector as the manufacturing and assembling of goods produces by-products and waste discharge. The rise of investors and asset managers using ESG parameters to evaluate portfolio risks motivated greater transparency in reporting; however, biodiversity is not a mainstream consideration unlike the importance placed on climate issues. This is underpinned by there being no evidence of any financial organisation in this study, auditing its biodiversity impacts.

The healthcare sector has the potential to pick up pace in nature stewardship. Manufacturing of drugs, medical equipment and healthcare services are heavily reliant on direct extraction of resources from nature and the provision of ecosystem services such as pollination, water quality, disease control and intrinsic value from being in nature. Similarly, corporations in the communication services industry were least concerned with biodiversity. Albeit their impacts may be lower than in other sectors, the construction and placement of telecommunication infrastructures such as heavy aerial cables and mobile phone towers may impact biodiversity. Corporations that are tardy in addressing its nature-related risks signals poor resilience and risk management to its investors.

To halt and reverse the current trend of biodiversity loss, attention will gravitate towards the financial sector as its the single most influential industry with a global reach, and the ability to flex and effectively drive change. Notably, concepts such as spatial finance are explored as a potential gamechanger in the biodiversity crisis. Nature-related risks can be detected through satellite data by tracking zones that are protected or under stress. By deploying geodata analytics, financial institutions can monitor the nature impacts of companies they invest in by matching geographical nature data to the asset locations. At this juncture, company specific nature data is scarce. To effectively address nature-related risks, financial institutions must connect nature impacts and dependencies on a company level in order to determine what it means in terms of financial risks.

The State of Nature-related Reporting: Key Insights

Figure 5: Overall Nature-related Reporting Performance by Jurisdiction

Corporations in Asia-Pacific are grappling with understanding biodiversity impacts and nature reporting. The average score across the 13 jurisdictions covered in this study is 31.4 out of 100. Japan and Australia ranked in the upper echelon of nature reporting. Higher income economies have the advantage of greater resources and talents but have not proven to be more effective in delivering on nature commitments. Several developing countries including Malaysia, India and Thailand performed better at nature reporting than higher income economies. Delving into the top performers, Japan as one of the region's most active conservationist benefited from an uplift in attention towards biodiversity when it hosted the COP 10 in Nagoya. With the Japan Biodiversity Fund (JBF) launched in 2011, they are one of the earliest contributors in the region to have developed a 10-year biodiversity strategy with action plans (Convention on Biological Diversity, 2021).

To move the needle in the right direction in the context of diligent nature management and reporting, Australia mandates Environmental Impact Assessment (EIA) on developments that have an impact on the community, land, water, or of environmental significance, through its Environment Protection and Biodiversity Conservation Act (EPBC). The EPBC requires projects and developments to identify and prepare recovery plans for any threatened species, ecological communities, and critical habitats. In addition, projects and developments are to identify their interactions with migratory and marine species on top of formulating mitigation plans for threatening processes. The EPBC protects world heritage properties, national heritage places, significant wetlands, nationally threatened species, ecological communities, migratory species, marine areas, and water sources. Selected high-risk developments are additionally subjected to assessment and approval from the Australian Government environment minister under the EPBC act as well (The Federal Register of Legislation, 2016). The standout nature reporting from Japan and Australia cannot be decoupled from active government involvement and stringent environmental regulations.

Interestingly, the nature reporting performance of the jurisdictions across Asia-Pacific mirrors a similar performance trend of the respective jurisdictions when it comes to overall sustainability reporting, covering the broader ESG focus (PwC & CGS, NUS Business School, 2022). India stood out as an exception; they fared slightly better at nature-reporting despite being a laggard performer when comparing its overall sustainability performance with other Asia-Pacific jurisdictions. The boost in performance could be attributed to COP 11 held in India, Hyderabad where the BIOFIN was launched to improve resource mobilisation for biodiversity conservation and to align India's private, domestic, and international finance to the National Biodiversity Action Plan (NBAP). India's national biodiversity targets and commitments were led by the MoEF&CC with strong support from the UNDP India and National Biodiversity Authority of India (BIOFIN, 2021). In the following sections, we delve into the key insights obtained from the 410 Asia-Pacific corporations with nature and biodiversity disclosures.

The State of Nature-related Reporting: Key Insights

Governance

In understanding how board governance manages nature concerns, we identified whether companies mentioned in their sustainability report the 1) board's oversight on nature-related risks and opportunities, and 2) management's role in assessing and managing nature-related risks and opportunities.

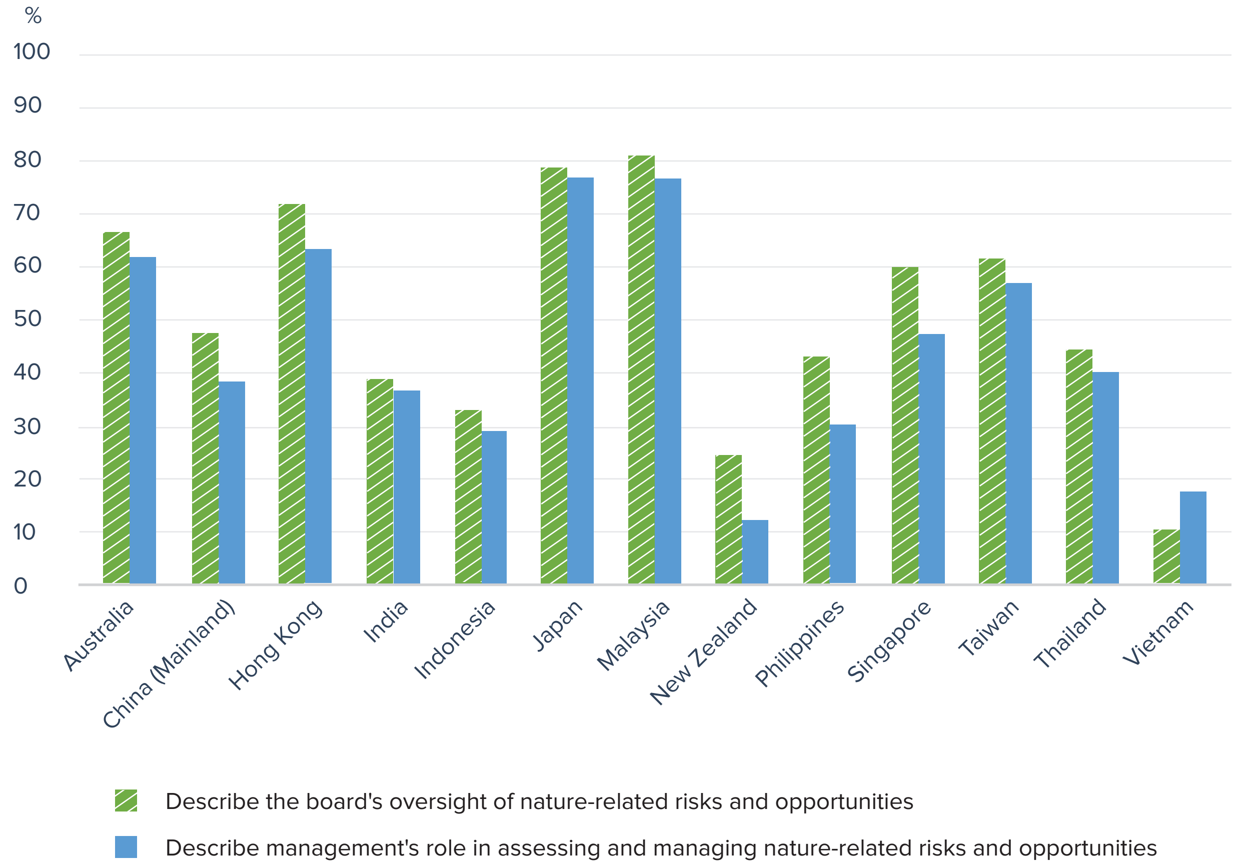


Figure 6: Nature-related Reporting on Governance

Disclosing board of directors' responsibilities over nature-related issues and installing an appropriate ESG governance structure can help to establish oversight and responsibility. This provides confidence that the necessary framework and resources are in place for the strategy to be delivered. Upskilling for board of directors gives an indication of the board's ability to discharge their governance and oversight duties.

State of Practice

- The findings reveal an assuring trend whereby majority of the large Asia-Pacific corporations in our study 52%, 311 companies) disclosed their governance structure with sustainability committees comprising of the board of directors, and senior management overseeing sustainability matters. With the foundation for diligent environmental stewardship established, 46% - 276 companies elaborated on their management's role in assessing sustainability-related risks and opportunities.

- However, most companies do not explicitly outline nature-related responsibilities alongside climate and sustainability priorities. In many instances, nature and biodiversity are subsumed under the umbrella of sustainability. The term “biodiversity” is rarely highlighted as a priority within the board's purview, possibly due to the limited understanding of how biodiversity underpins the goods and services provided by large corporations.

- The top performers in governance reporting, namely, Japan and Malaysia are distinctly guided by its regulators. Since April 2022, listed companies on the Japan Exchange Group are expected to fulfil the TCFD requirements, of which mandates disclosure on board's oversight of climate related risk and opportunities. Similarly, the main market listing rules by the Malaysian Stock Exchange, Bursa Malaysia, requires all listed issuers with a market capitalization of over RM2 billion, excluding treasury shares, to contain a sustainability statement in their annual report. In their Sustainability Statements, Bursa Malaysia mandates all listed issuers to disclose the governance structures the companies established to manage environmental risks and opportunities. Evidently, the commitments from regulators led to the establishment of proper governance structure to support nature reporting.

- Of noteworthy best practices are from the leaders in nature-reporting that have committed to investing resources in knowledge building. Ayala Corporation for example, organises annual sustainability summits for its senior management including the board of directors, with attendance monitored and documented. Conversely, laggers simply entask their sustainability committees to resourcefully update the board of directors and management on the fast-changing trends and organisation's sustainability performance, through regular meetings.

The State of Nature-related Reporting: Key Insights
Strategy

In understanding how organisations come up with strategies to manage nature concerns, we identified whether companies mentioned in their sustainability report the 1) impact of nature-related risks and opportunities on the organisation's businesses, strategy, and financial planning, the 2) nature-related risks and opportunities the organisation has identified over the short (<2 years), medium (2 to 5 years), and long term (>5 years), the 3) organisation's interactions with low integrity ecosystems, high importance ecosystems or areas of water stress, and 4) the resilience of the organisation's strategy, taking into consideration different scenarios.

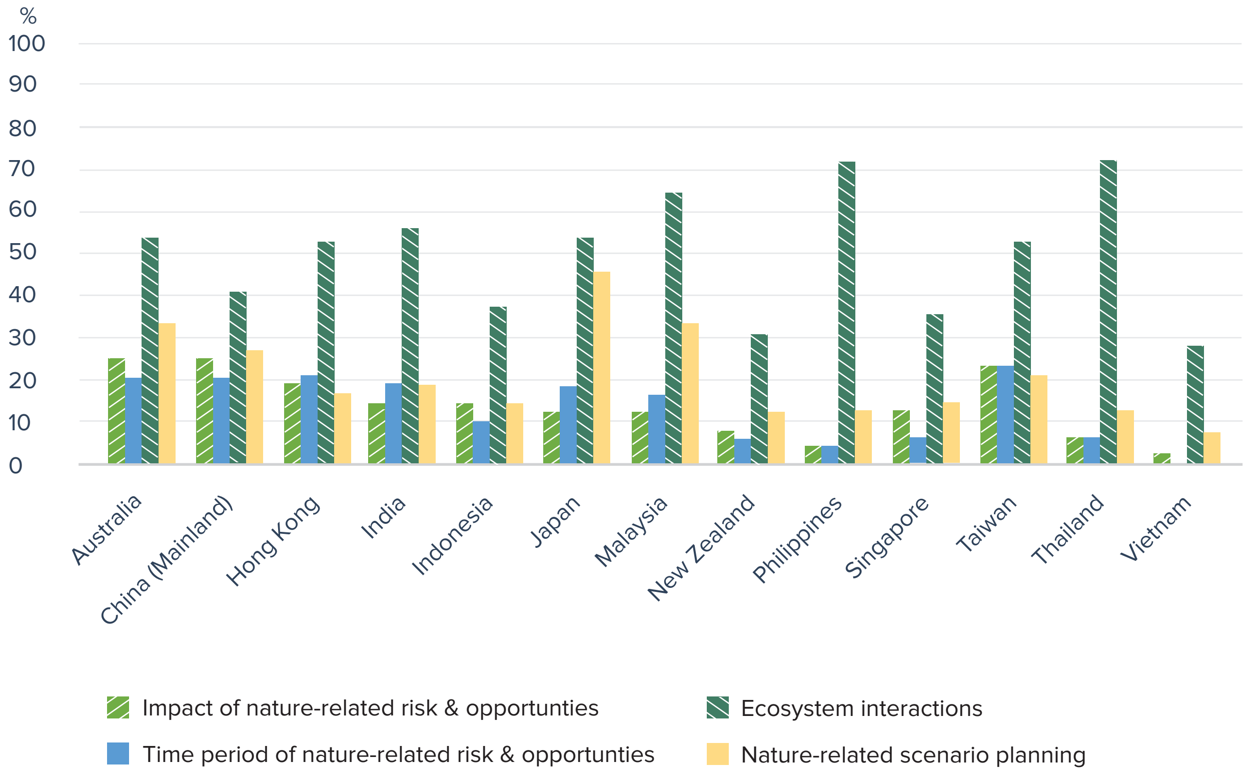


Figure 7: Nature-related Reporting on Strategy

Corporations are progressively aware of the beneficial impacts and savings that nature-based solutions offer, whether it comes from replacing chemicals with natural pest control, creating wetlands to improve water quality, or using green roofs to reduce indoor temperatures, the list goes on. Biodiversity is a complex, potentially misunderstood topic, and sometimes considered by companies in a narrow way, typically as the flora and fauna their operations directly affect. Core aspects of business operations that directly affect biodiversity are sustainable sourcing, pollution control, water use, waste management, carbon emissions and circular economy.

State of Practice

- Across the Asia-Pacific 13 jurisdictions examined, tepid performance is seen in the aspect of reporting the impact of nature-related risks and opportunities on the organisation's business, strategy, and financial planning, with only 82 (14%) companies' disclosures. Corporations struggle to comprehend how business operations impact and are interdependent on nature. The lack of evidence on nature-related training to build internal capacity denotes signs of poor preparedness.

- By no surprise, corporations in the consumer staples industry were the strongest reporters on nature-related strategies as the sector is heavily dependent on nature for raw materials. Water use (39 companies, 55%) and sustainable sourcing (32 companies, 45%) were most disclosed as businesses attempt to draw links on how nature risk carries interwoven impacts on their operations and bottom line.

- When reviewing the time period of the nature-related risks and opportunities, performance dipped further downhill with only 48 (8%) companies reporting with a time horizon. Delta Electronics demonstrated best practice by defining its short, mid and long term risks. In the short-term, Delta Electronics identified that electricity usage can contribute to the loss of biodiversity and the disruption of habitat function and integrity. In the mid-term, water shortages affect suppliers and operating sites. Whereas in the long-term, ecosystem services degradation can cause supply chain disruptions and increase competition for raw materials. Laudably, Delta Electronics considered employees' health and mental state derived from the loss of biodiversity, as well as the potential backlash from communities and stakeholders if their activities affect the stability of the natural ecosystem.

- Corporations in Thailand and Philippines emerged as the top performers in reporting its interactions with low integrity ecosystems, high importance ecosystems or areas of water stress. Echoing the findings from GRI ASEAN and CGS, NUS Business School (2022), both jurisdictions demonstrated a higher uptake of TCFD, ahead of the remaining Asia-Pacific countries. The Stock Exchange of Thailand goes beyond conducting TCFD workshops to preparing a translated version and published TCFD Good Practice Handbook which demonstrates the best practices from existing climate-related financial disclosures from across the G20 countries (Stock Exchange of Thailand, 2021). In the Philippines, the UN SSE, IFC, and CDP provide the market with a range of high-quality training on climate disclosure (Sustainable Stock Exchanges Initiative, 2021). Given the interconnectedness of climate and nature issues, it is possible that the provisions from the governments in Thailand and Philippines accelerated the awareness of nature-related issues among its listed companies.

- There were significantly more companies 137 (23%) reporting their interactions with critical ecosystems. Among them, 119 (20%) companies reportedly engaged in reforestation, mangrove restoration, and similar tree conservancy initiatives. Commonly, companies acknowledged their interactions with flora and fauna species. 95 (16%) companies are committed to avoid operating in protected areas defined by the International Union for Conservation of Nature (IUCN) or engaging in activities which might disturb animal and plant organisms on the IUCN Red List of Threatened Species. It is uplifting to see companies remediating and reclaiming ecosystems on or outside their operating sites to preserve significant flora, fauna, and native vegetation.

- Companies that have adopted TCFD disclosed on scenario planning and some overlaps with nature risks were found. For instance, traditionally, a drought presents itself as a climate risk, but companies are also identifying it as a nature risk when its value chain is impacted by water shortages. Besides seeing a decline in crops or raw materials, in Asia the impact ripples on to affect water inflows at hydropower plants. Vietnam and the Indochinese region are major users of hydropower (Mordor Intelligence, 2022). The problem circles back to having to resort to alternative energy sources and possibly, higher emissions. Progressively, more companies will realise the interconnectedness of the twin crisis we are facing.

- To build resilience and address nature-related risk, corporations performed mitigations related to land use, waste management, water use and ecological monitoring. This ranges from conservation initiatives, to minimising the use of disturbed lands, establishing conservation buffers, and formulating policies to support zero deforestation. Furthermore, companies integrated monitoring efforts on their consumption, discharges, and effluent levels related to water use into their resilience strategies. Other types of ecological monitoring programmes companies conducted include soil quality, and flora and fauna monitoring initiatives to manage fragile ecosystems with integrity.

The State of Nature-related Reporting: Key Insights

Risk Management

In understanding how organisations come up with strategies to manage nature concerns, we identified whether companies mentioned in their sustainability report 1) the organisation's processes for identifying and assessing nature-related risk, 2) the organisation's processes for managing nature-related risks, and 3) how processes for identifying, assessing, and managing nature-related risks are integrated into the organisation's overall risk management.

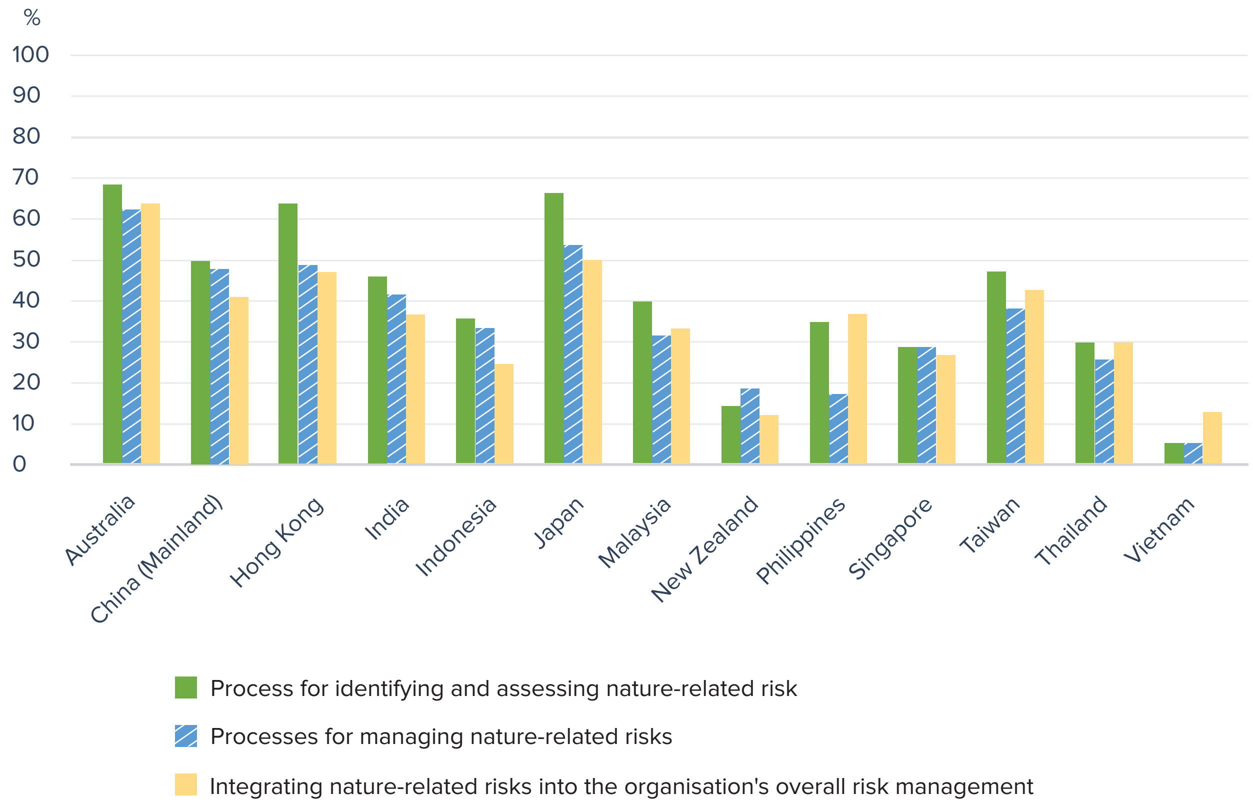


Figure 8: Nature-related Reporting on Risk Management

Biodiversity and nature risks are hard to attribute within the complex and multifaceted value chains of large corporations. The daunting business risks of ignoring biodiversity could present in countless forms. To name a few, supply chains can be disrupted posing financial risk as corporations lose affordable natural capital, or reputational risk and regulatory risk as environmental laws tightens with policies such as the post-2020 Global Biodiversity Framework. As companies attempt to grapple with the intricacies of nature, investors and stakeholders seek to understand how they identify, assess, and manage nature-related risks throughout its operation, and whether those processes are integrated into existing risk management systems.

Integrating nature-related risks into the overall risk management system is critical in managing them, whether that entails restoration or mitigation measures. Such disclosure strengthens brand image as it enables investors to evaluate the organisations' overall risk profile and risk management activities. Corporations earn their social licence to operate when trust is built through open communication, communities gain confidence.

State of Practice

- Australia is a standout performer across the 3-core approach of identifying, managing, and integrating nature-related risk. Nature-related risk comes with a hefty price tag, estimates reveal that wildfires will cost Australia up to A$2.2 billion annually between 2020 and 2049 (Biddle et al., 2020). The latest 2022 Queensland flood amounted to a loss of A$577 million (Deloitte, 2022). To make matters worse, invasive plants and animal species are fuelling extinction rates in Australia. Biodiversity loss from invasive species inflicts a significant financial burden on Australia. In the last 60 years, invasive species alone have cost Australia upward of A$390 billion (Bradshaw et al., 2021). The unprecedented ecological challenges in the continent triggered proactiveness among Australian companies.

- 114 (19%) Companies who have identified biodiversity or nature as a moderate to high priority material topic have mostly disclosed details of their nature-related risks or opportunities, and its processes for managing nature-related risks. However, this practice is not commonplace across Asia-Pacific corporations despite it being a pivotal step in understanding the full breadth of impacts on nature, biodiversity, and other intertwined environmental issues.

- Despite having identified the nature-related risk, companies performed weaker in disclosing the actions taken to manage the risk identified. This is indicative of internal capability gaps among studied companies. In other words, although some companies are well positioned to identify their nature-related risks, they lack the expertise to develop nature solutions to address the problems identified.

- The most employed risk management practices by corporations are Environmental Impact Assessments (EIA) and ecological surveys. These are typically conducted at developmental sites, on a project level. A small handful of companies engaged external consultants or carried out biodiversity audits on selected operating sites.

- We found no evidence of any corporation taking comprehensive steps involving a full value chain biodiversity audit to examine how its operations impact the natural world. The absence of baseline biodiversity audits hinders the company's ability to ascertain the true extent of impact and operational risks, let alone any indication on how nature risk translates to potential financial loss.

- 106 (18%) companies disclosed how nature risk management processes are integrated with the organisation's overall risk management framework. In most cases, it is the Enterprise Risk Management (ERM) framework, whereby nature-related risks fall within the purview of the risk management committee.

Nature-related risk management is viewed from a narrow lens at present as the tracking of biodiversity impacts are merely conducted at direct operations or project level. This however needs to be expanded to the entire value chain to comprehensively diagnose operational impacts, similar to how scope 3 emissions are tracked. Addressing the biodiversity crisis calls for equal commitment as how corporations globally are combatting the climate crisis. Herein lies the opportunities for companies with capability gaps to consult with external expertise or invest in fostering internal capacity to adequately identify, manage, and integrate nature-related risks with the organisation's overall risk management approach. Overcoming these obstacles are prerequisites to scaling biodiversity foot printing, only then can we safeguard nature's essential services and begin to restore our ecosystems on a large scale.

The State of Nature-related Reporting: Key Insights
Metrics and Targets

In learning how organisations came up with metrics and targets to manage nature concerns, we identified whether companies mentioned in their sustainability report the 1.) metrics used by the organisation to assess and manage nature-related risks and opportunities in line with its strategy and risk management process, and the 2.) targets used by the organisation to manage nature-related risks and opportunities and performance against targets.

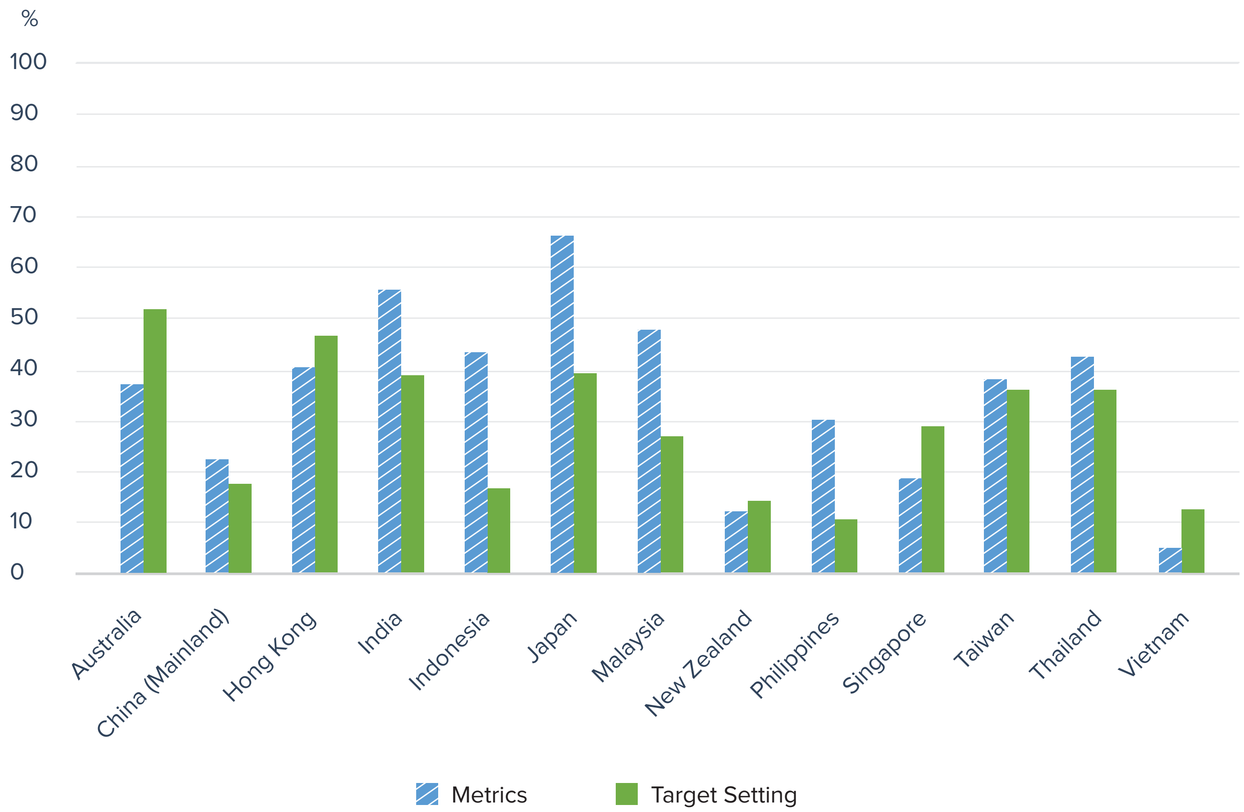


Figure 9: Nature-related Reporting on Metrics and Targets

Corporations with clearly defined nature targets linked to their business strategy are a step closer to tracking and realising the financial relevance of their biodiversity metrics. Demonstrating the use of metrics and targets to assess and manage nature-related risks and opportunities sends a clear signal to investors on the degree to which the company has assimilated nature issues into its strategy and risk management processes.

State of Practice

- We found that 200 (37%) companies disclosed their metrics to assess and manage nature-related risks and opportunities. Specifically, 157 (26%) companies mentioned water-related metrics, tracking water consumption, discharge, and water withdrawal levels. 23 (4%) companies incorporated ecological protection, restoration, conservation, or rehabilitation work as nature metrics. Commonly used metrics include reporting of the number of trees planted, responsible land use and species count for fauna.

- We found no evidence of companies adopting ecosystem valuation methods to incorporate metrics that reflect a wider range of ecological services, impact, and interaction with the environment beyond the mainstream conversations of water-use, land-use, site preservation and biodiversity protection efforts.

- Our findings indicate that 182 (30%) companies reported the targets used to benchmark their nature-related performance. Continuing the trend of strong water stewardship, 88 (15%) companies set water-related targets. For example, water-related targets commonly consist of the ratio of water recovered, water efficiency, water consumption intensity, and water withdrawal compared to a determined base year.

- In the context of time horizon, a small pool of 66 (11%) companies disclosed targets that are time bound. This is alarming as most companies are setting targets without defining their time horizon, which hinders the measurability of the targets. Setting of noble nature positive goals are futile without specifically addressing the paths to attain it, or a timeline. We need S.M.A.R.T nature targets that are specific, measurable, attainable, realistic, and timely to be able to restore nature on a global scale.

- 33 (6%) companies aiming to achieve a Net Positive Impact (NPI), No Net Loss or Biodiversity Net Gain (BNG) demonstrated diligent nature stewardship and have attempted to establish certain processes to achieve their goal.

In this study, we found wide variances in the metrics and targets set by corporations to address biodiversity concerns; albeit incoherent, we will soon begin to see greater unifications on a global scale when the Taskforce for Nature-related Financial Disclosures and the Science-based Targets for Nature are formalised. The climate crisis can be measured and converted into a standardised metric of CO2-equivalents, making it possible to unify targets across continents. Whereas for impacts on nature, there is no internationally agreed metric. At the global level none of the 20 Aichi Biodiversity Targets agreed by Parties to the Convention on Biological Diversity (CBD) in 2010 have been fully achieved. There are high hopes for the COP 15, Post-2020 Biodiversity Framework to arrive at a commonplace on the metrics and indicators on a global and national level.

As governments and corporations around the world race towards the net-zero ambition, the journey is crippled unless a net positive ambition for biodiversity is similarly taken in stride as a business norm. The key to achieving no net loss or net positive impact on biodiversity is the setting clear targets with tangible actions based on key impacts and dependencies. Corporations on a trajectory towards net positive impact have a competitive edge as they build resilience and brand reputation.

Nature-related Reporting Rating by Company

The top 10 performing companies in biodiversity and nature disclosures across the 13 Asia-Pacific jurisdictions are as follows (presented in alphabetical order):

Australia	China (mainland)
AURIZON HOLDINGS LIMITED	ANHUI CONCH CEMENT COMPANY LIMITED
BHP GROUP LIMITED	BANK OF CHINA LIMITED
MACQUARIE GROUP LIMITED	CHINA CONSTRUCTION BANK COMPANY LIMITED
NATIONAL AUSTRALIA BANK LIMITED	CHINA EVERBRIGHT BANK COMPANY LIMITED
QBE INSURANCE GROUP LIMITED	CHINA MERCHANTS BANK COMPANY LIMITED
SUNCORP GROUP LIMITED	CHINA PACIFIC INSURANCE (GROUP) COMPANY LIMITED
SYDNEY AIRPORT	CHINAVANKE COMPANY LIMITED
TRANSURBAN HOLDINGS LIMITED	GUOTAI JUNAN SECURITIES COMPANY LIMITED
WESFARMERS LIMITED	MUYUAN FOODS COMPANY LIMITED
WOOLWORTHS GROUP LIMITED	XINJIANG GOLDWIND SCIENCE & TECHNOLOGY COMPANY LIMITED

Hong Kong	**India**
CHINA GAS HOLDINGS LIMITED	ADANI PORTS AND SPECIAL ECONOMIC ZONE LIMITED
CHINA MENGNIU DAIRY COMPANY LIMITED	COAL INDIA LIMITED
CHINA OVERSEAS LAND & INVESTMENT LIMITED	GODREJ CONSUMER PRODUCTS LIMITED
CLP HOLDINGS LIMITED	HDFC BANK LIMITED
ENN ENERGY HOLDINGS LIMITED	HINDUSTAN UNILEVER LIMITED
GEELY AUTOMOBILE HOLDINGS LIMITED	HINDUSTAN ZINC LIMITED
MTR CORPORATION LIMITED	ITC LIMITED
NONGFU SPRING CORPORATION LIMITED	NESTLE INDIA LIMITED
SANDS CHINA LIMITED	SHREE CEMENT LIMITED
TECHTRONIC INDUSTRIES COMPANY LIMITED	ULTRATECH CEMENT LIMITED

Indonesia	Japan
PT ADARO ENERGY TBK	CANON INCORPORATED
PT BANK CENTRAL ASIA TBK	HITACHI LIMITED
PT BANK CIMB NIAGA TBK	ITOCHU CORPORATION
PT BANK PANIN TBK	JAPAN TOBACCO INC
PT BUKIT ASAM TBK	KAO CORPORATION
PT CHANDRA ASRI PETROCHEMICAL TBK	KUBOTA CORPORATION
PT INDOCEMENT TUNGGAL PRAKARSA TBK	MITSUBISHI CORPORATION
PT INDOFOOD CBP SUKSES MAKMUR TBK	MITSUBISHI ESTATE COMPANY LIMITED
PT JASA MARGA (PERSERO) TBK	MITSUI & COMPANY LIMITED
PT SEMEN INDONESIA (PERSERO) TBK	SONY GROUP CORPORATION
PT UNILEVER INDONESIA TBK	

Malaysia	New Zealand
FRASER & NEAVE HOLDINGS BERHAD	CONTACT ENERGY LIMITED
GAMUDA BERHAD	FONTERRA CO-OPERATIVE GROUP LIMITED
GENTING BERHAD	GOODMAN PROPERTY TRUST
GENTING PLANTATIONS BERHAD	MARSDEN MARITIME HOLDINGS LIMITED
HAP SENG CONSOLIDATED BERHAD	MERCURY NZ LIMITED
IOI CORPORATION BERHAD	MERIDIAN ENERGY LIMITED
KUALA LUMPUR KEPONG BERHAD	PORT OF TAURANGA LIMITED
MISC BERHAD	PUSHPAY HOLDINGS LIMITED
SIME DARBY BERHAD	RESTAURANT BRANDS NEW ZEALAND LIMITED
SIME DARBY PLANTATION BERHAD	SANFORD LIMITED
WESTPORTS HOLDINGS BERHAD	SCALES CORPORATION LIMITED
	TOURISM HOLDINGS LIMITED
	VISTA GROUP INTERNATIONAL LIMITED

Philippines	Singapore
ABOITIZ EQUITY VENTURES INC	ASCENDAS REAL ESTATE INVESTMENT TRUST
AC ENERGY CORPORATION	ASCOTT RESIDENCE TRUST MANAGEMENT LIMITED
AYALA CORPORATION	CAPITALAND CHINA TRUST
AYALA LAND INC	CAPITALAND LIMITED
FIRST GEN CORPORATION	CITY DEVELOPMENTS LIMITED
FIRST PHILIPPINE HOLDINGS CORPORATION	FRASERS PROPERTY LIMITED
INTERNATIONAL CONTAINER TERMINAL SERVICES INC	GENTING SINGAPORE LIMITED
MANILA ELECTRIC COMPANY	KEPPEL CORPORATION LIMITED
MANILA WATER COMPANY INC	SINGAPORE AIRLINES LIMITED
NICKEL ASIA CORPORATION	THAI BEVERAGE PCL
RIZAL COMMERCIAL BANKING CORPORATION	UNITED OVERSEAS BANK LIMITED
SEMIRARA MINING AND POWER CORPORATION	WILMAR INTERNATIONAL LIMITED

Taiwan	Thailand
CATHAY FINANCIAL HOLDINGS COMPANY LIMITED	B.GRIMM POWER PCL
CTCI CORPORATION	BANPU PCL
DELTA ELECTRONICS INC	BANPU POWER PCL
EVA AIRWAYS CORPORATION	CHAROEN POKPHAND FOODS PCL
GRAPE KING BIO LIMITED	CP ALL PCL
INVENTEC CORPORATION	DELTA ELECTRONICS PCL
SHANGHAI COMMERCIAL & SAVINGS BANK LIMITED	MINOR INTERNATIONAL PCL
TAISHIN FINANCIAL HOLDING COPMPANY LIMITED	SIAM MAKRO PCL
TAIWAN BUSINESS BANK LIMITED	THAI UNION GROUP PCL
TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LIMITED	THE SIAM CEMENT PCL
UNITED MICROELECTRONICS CORPORATION	
WALSIN LIHWA CORPORATION	
WISTRON CORPORATION	
WISTRON NEWEB CORPORATION	

Vietnam
BANK FOR INVESTMENT AND DEVELOPMENT OF VIETNAM INSURANCE JOINT STOCK COMPANY
DEVELOPMENT INVESTMENT CONSTRUCTION JOINT STOCK CORPORATION
GEMADEPT CORPORATION
JOINT STOCK COMMERCIAL BANK FOR INVESTMENT AND DEVELOPMENT OF VIETNAM
KHANG DIEN HOUSE TRADING AND INVESTMENT JOINT STOCK COMPANY
PHAT DAT REAL ESTATE DEVELOPMENT CORPORATION
THANH THANH CONG - BIEN HOA JOINT STOCK COMPANY
THE PAN GROUP JOINT STOCK COMPANY
VIETNAM DAIRY PRODUCTS JOINT STOCK COMPANY
VIETNAM PROSPERITY JOINT STOCK COMMERCIAL BANK

**Note: Companies with a tie in score are included within the top >10*

Table 5. Nature-related Reporting Rating by Company

Highlights of Exemplary Nature-related Reporting Practices

Ayala Corporation is commendable in its governance reporting. They elucidated the processes by which the board committee is informed about nature-related issues on internal control mechanisms and risk management. The sustainability governance of Ayala Corporation is helmed by the Sustainability Committee, which assists the Board in integrating environmental, social, and governance matters into Ayala's core strategies and operations. Working in tandem with the Risk Management and Related Party Transactions Committee (RMRPT), the Chief Risk and Sustainability Officer (CRO & CSO) is tasked with leading the identification, assessment, and management of sustainability-related risks and opportunities while supervising sustainability programs to address ESG concerns. Under the umbrella of sustainability, biodiversity is ranked as 1 of the top 5 material issues. The Sustainability Committee, RMRPT, and CRO & CSO are supported by the Group Risk Management and Sustainability Unit (GRMSU), which supervises the work of risk, sustainability, and insurance officers assigned to process improvement and delivery of company-wide initiatives. Continued education is valued by Ayala Corporation. The board of directors and senior management across the group attend annual summits on the topic of governance, risk management, and sustainability. Ayala Corporation has effectively demonstrated how a robust governance structure can help the Board manage the sustainability direction, strategies, and programs across Ayala Corporation to strike a balance between profitability and environmental stewardship.

Hindustan Unilever Limited is laudable in its reporting of strategy. Biodiversity loss is outlined as an emerging risk. Hindustan Unilever's material efficiency strategy covers aspects including the monitoring of trends in raw material availability, pricing due to short-term weather impacts to ensure continued availability of input materials and integrating weather system modelling into its forecasting process. Through a Climate & Nature Fund, Hindustan Unilever aims to establish regenerative agriculture sourcing for 80% of its key raw materials over five years. One project, for example, uses satellite data and digital sensors to help tomato farmers in Spain optimise water use and improve soil health through cover cropping. To protect and preserve natural habitats in the places where its raw materials are produced, Hindustan Unilever established its People & Nature Policy to enforce supplier requirements around no deforestation and human rights for its key commodities. Furthering its commitments, Hindustan Unilever published a set of Regenerative Agriculture Principles, to guide suppliers and farmers, including smallholders, on how to nourish soil and water, capture carbon and restore land. In addressing water risk, Hindustan Unilever's nature strategies focuses on 12 factories located in several water-stressed countries by working with the 2030 Water Resources Group to address water security for consumers in Bangladesh, Brazil, India, South Africa and Vietnam. Spearheading research and development to invest in new products and formulations is another commendable nature strategy employed by Hindustan Unilever to ensure that its products can work with less water, poor quality water or no water.

Wilmar International Limited is exemplary at reporting on risks and opportunities. Wilmar clearly described their processes for identifying nature-related risks and opportunities by applying the High Conservation Value Network (HCVN) toolkit to discern and conserve areas of high conservation value (HCV). Wilmar conducted thorough assessments of its conservation areas to monitor and manage wildlife, including plants and animals listed on the IUCN Red List of Threatened Species. To scan biodiversity hotspots and their plantation areas, Wilmar utilized satellite imageries and a Spatial Monitoring and Reporting Tool (SMART) to compile and compare year-on-year data, conduct trend analysis, and further identify high conservation value areas and encroachment within its operation areas. Prior to any developments, Wilmar performs Environmental Impact Assessments (EIA) to screen for nature-related risks and the ecological impact of their action. In addition, Wilmar implemented the Aqueduct tool from the World Resources Institute (WRI) (Luo et al., 2015) to identify water-stressed areas. Another key component of Wilmar's exemplary practice is its integration of the HCV Management Implementation Dashboard to supervise HCV management programmes and quantify the progress of environmental management plans. Wilmar effectively showcased the value of standardising protocols for nature-related risk management and how it can consolidate risks and opportunities reporting.

ThaiBev is commendable in its reporting of metrics and targets. Similar to a Net Zero ambition, ThaiBev boldly strives towards achieving net positive impact on biodiversity and no gross deforestation in their operations by 2030. The biodiversity commitments of ThaiBev are helmed by a mitigation hierarchy, which details internal compliance standards to avoid, minimize, restore, and offset nature-related risks engendered by their production operations. On top of avoiding operations in areas of high biodiversity value or containing critical biodiversity where feasible, ThaiBev actively restore and rehabilitate its operating sites and offset its adverse biodiversity impacts in accordance with recognised best practices such as the Principles on Biodiversity Offsets developed by the Business and Biodiversity Offset Program (BBOP). Notably, ThaiBev's commitment to no gross deforestation extends to their supply chain through procurement, internal compliances, and audits on selected critical suppliers to monitor and influence alignment of targets and metrics.

Conclusion and Recommendations

The biodiversity crisis is inseparable from the climate crisis; essentially, we are confronted with a 2 in 1 conundrum that needs to be addressed in tandem. In attempts to garner public support for biodiversity, climate change and mitigate the backlash against carbon taxes; the governments of Columbia and Costa Rica embraced the 2 in 1 crisis with creativity by directing carbon taxes to fund programs supporting water, land, and biodiversity conservation efforts. This unifying solution supports the social and economic livelihoods of local communities. Creative solutions can be born out of any jurisdiction and corporations that wears a double hat in resolving the world's climate and biodiversity crisis.

In this study, we sought to understand how corporations across the Asia-Pacific region conduct nature-related reporting. We investigated how corporations covered their nature-related reporting in six key areas: reporting frameworks, materiality, governance, strategy, risk management, metrics, and targets. It is evident that nature and biodiversity is a part of corporate discussions, albeit its level of priority needs to be elevated. Japan and Australia emerged as the region's most active conservationists. The relative strength of the two jurisdictions in nature-related reporting is due to a combination of mandate, government support and the severity of nature-related risks in the region, which trigger proactiveness.

The largest corporations in Asia-Pacific in general had good governance structures established with dedicated sustainability committees but nature is underdiscussed and often silently subsumed within the umbrella of sustainability. We found that companies are not aware of their nature-related risks beyond affiliation with the physical impacts of climate-related risks and are inadequately linking nature-related risks to opportunities and target setting. Bold targets that are timebound, and internal capacity building are lacking. At present, there is no common metric for biodiversity tracking, wide variances in the approach taken by corporations to address biodiversity concerns, and no observations of biodiversity audits conducted for a full value chain. There are high hopes for the COP 15, Post-2020 Biodiversity Framework to arrive at a commonplace on the metrics and indicators on a global and national level. Corporations have the power to effectively move the needle in halting and reversing biodiversity loss, but the world is running a crippled race towards net zero unless we strive towards nature positive, in tandem, then we are at the precipice of change. Recommendations along with initial questions for Boards to consider are explored:

- **Be Accountable on Nature-related Issues**
  The first step to enabling transformative change is to include nature and biodiversity on the boardroom agenda. Engage with stakeholders to obtain input and determine the level of priority for nature and biodiversity. Is it a material issue?

- **Integrate Nature into Core Strategy**
  Committing to nature entails a mindset shift from an "add-on" attitude towards embedding nature into core strategies. Business reliance requires careful examination of the operational impacts on biodiversity, across the full value chain. This means factoring in not only direct operations but delving into supply chain and possible downstream impacts. Faced with a material decision today, can nature risks be turned into opportunities?

- **Set Time-bound Targets**
  Start taking steps to reduce impacts on biodiversity by following the mitigation hierarchy - avoid, minimise, restore and finally, offset. Keep an eye on the developments of global frameworks such as the Taskforce on Nature-related Financial Disclosure (TNFD) and Science Based Targets for Nature (SBTN). Biodiversity Net Gain targets may soon progress and rise on par with the Net Zero ambition. Is the organisation prepared to set SMART targets?

- **Address Capability Gaps**
  Opportunities for companies with capability gaps to consult with external expertise or invest in fostering the internal capacity to adequately manage nature-related risks. Are there nature policies, processes, controls, and governance in place, similar to those supporting financial reporting?

- **Communicate Efforts**
  Publicise coherently and reap the benefits of being a responsible business.

Abbreviations

BBOP	Business and Biodiversity Offset Program
BNG	Biodiversity Net Gain
CBD	Convention on Biological Diversity
CDSB	Climate Disclosure Standards Board
COP	Conference of the Parties to the United Nations Convention on Biological Diversity
CRO	Chief Risk Officer
CSO	Chief Sustainability Officer
EMS	Environmental Management System
EPA	Environmental Protection Administration
EPBC	Environment Protection and Biodiversity Conservation Act
ERM	Enterprise Risk Management
FSC	Financial Supervisory Commission
GRI	Global Reporting Initiative
GRMSU	Group Risk Management and Sustainability Unit
HCV	High Conservation Value
HCVN	High Conservation Value Network
IFC	International Finance Corporation
IPBES	The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IUCN	International Union for Conservation of Nature
MoEF&CC	Ministry of Environment, Forest and Climate Change
NBAP	National Biodiversity Action Plan
NGFS	Network for Greening the Financial system
NPI	Net Positive Impact
OECD	Organisation for Economic Co-operation and Development
RMRPT	Risk Management and Related Party Transactions Committee
SBTN	Science Based Targets for Nature

SDG 14	Sustainable Development Goal 14 - Life below Water
SDG 15	Sustainable Development Goal 15 - Life on Land
SMART	Specific, Measurable, Achievable, Realistic, Timely
TCFD	Taskforce on Climate-related Financial Disclosures
TNFD	Taskforce on Nature-related Financial Disclosures
UNDP	United Nations Development Programme
UN SSE	United Nations Sustainable Stock Exchange
WRI	World Resources Institute

Definitions

Biodiversity Net Gain (BNG) - “Net gains are additional conservation outcomes that can be achieved for the biodiversity values for which the critical habitat was designated. Net gains may be achieved through the development of a biodiversity offset.”

No Net Loss - “The point at which the project-related impacts on biodiversity are balanced by measures taken to avoid and minimize the project's impacts, to understand on site restoration and finally to offset significant residual impacts, if any, on an appropriate geographic scale (e.g local, landscape-level, national, regional).”

Net Positive Impact (NPI) - “A net gain to biodiversity features measured in quality hectares (for habitats), number or percentage of individuals (for species), or other metrics appropriate to the feature. Net Positive Impact (NPI) on biodiversity is a target for project outcomes in which the impacts on biodiversity (i.e., the variety of ecosystems and living things) caused by the project are outweighed by the actions taken to avoid and reduce such impacts, rehabilitate affected species/landscapes and offset any residual impacts.” (UN Environment Programme World Conservation Monitoring Centre, 2022)

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