

The Forest Transition: from Risk to Resilience

Global Forests Report 2023

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Foreword



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The [Forest Declaration Assessment](#) was set up to track progress on commitments to global forest goals. It published its first report in 2022, asking ‘are we on track for 2030?’ The executive summary to that report could have been a single word: ‘No’.

The importance of forests, and the resulting risks and opportunities to businesses and financial institutions that fail to recognize and manage their impacts and dependencies on them, continue to be better understood every year. The role of forests (and other natural ecosystems) in climate mitigation, adaptation, and resilience is now clearly recognized in the battle against climate change. COP26 saw the launch of the [Glasgow Leaders’ Declaration on Forests and Land Use](#), bringing together over 140 countries on managing deforestation, accompanied by various new business and finance commitments, in a concerted effort to reinvigorate action on forests. COP27 saw these commitments reiterated and clarified with the [Forest and Climate Leaders Partnership](#) and Finance Sector Deforestation Action Plan respectively. An effective business strategy to manage climate risk must consider the impacts of deforestation and forest restoration.

At the same time, the parallel political processes on managing biodiversity loss also highlighted the importance of forests if we are to address species extinctions. The new [Global Biodiversity Framework](#) agreed at COP15 specifically aims to address the key drivers of biodiversity loss, number one of which is land use change, including deforestation.

Regulation on forest impacts is set to follow the political agreements. The [EU](#) is already taking the lead, with companies having to demonstrate their activities are not contributing to deforestation from 2024.

So why are the increasing arguments for action not being translated into change on the ground? Why are [deforestation rates](#), particularly in the tropics, stubbornly remaining at several million hectares every year?

This report gives an insight into some of the reasons why. With over 1,000 companies disclosing on their journey towards no deforestation in their supply chains, it gives us the clearest picture we have ever had of where companies stand and how they think.

The results show that companies *are* recognizing the risks from deforestation, and that they are making commitments to address them. However, those risks and commitments remain largely unaddressed, even when the costs of mitigating them outweigh the perceived costs of not doing so. Just one in 10 companies are disclosing that they are adequately managing their deforestation risks. Simply put, eradicating deforestation from supply chains is still not a priority for most companies, and the pressure to act from financial institutions, buyers or policy makers remains too weak to drive significant progress.

This *will* change at some point. Bar an environmental miracle, it has to. The question is when? The longer it takes, the more difficult, and expensive, it will be. Part of the problem is understanding that deforestation is such an integral part of the environmental challenge. Many businesses and financial institutions appear to perceive the various individual challenges as a list of disconnected threats, each to be addressed according to the pressures of the day. Climate is currently the focus. Calls to consider 'nature' or biodiversity are growing ever louder. Water is a priority in some areas. Who has time to think about deforestation too?

In truth, all environmental risks are facets of the same fundamental environmental challenge of supply and demand. We demand more from our environment than it can provide in terms of natural resources and waste processing whilst simultaneously eroding the supply through habitat destruction and excess pollution. Climate change is a symptom of this problem, not the underlying driver. Addressing the environmental challenge requires a holistic approach: a comprehensive understanding of *all* the environmental impacts, dependencies and resulting risks and opportunities (a process comprehensively outlined by the [TNFD](#)), the setting of clear, science-based responses (a process currently being outlined by the [SBTN](#)) and the implementation of a clear action plan that *also* takes into account social boundaries (a process that CDP currently tracks through its questionnaires and will be tracking on a more integrated basis in line with the TNFD, SBTN and other environmental frameworks and standards in the [coming years](#)).

Addressing deforestation will have to be an integral component of most holistic environmental strategies in the future. It is one action that contributes to so many challenges including climate, water security, biodiversity loss and potentially social benefits. The one in ten companies that disclose they are managing their risk today will have a significant head start on their competitors as the pressures continue to grow.



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Key findings



Forests are at the heart of our economy. Recognition of the role forests play in climate regulation and biodiversity loss continues to rise, yet forests continue to be cleared.

Forests are fundamental to businesses and impact many biodiversity, climate and nature-related risks and goals. A resilient economy cannot be accomplished without progress on deforestation.

At COP27, governments, financial institutions and companies from around the world took steps to cut deforestation and increase forest conservation.

A new Global Biodiversity Framework was agreed at CBD COP15 - a landmark agreement to protect biodiversity, ecosystems and indigenous land rights that includes a requirement for governments to ensure companies and financial institutions assess and disclose their impacts and dependencies on biodiversity. With deforestation one of the largest drivers of biodiversity loss, disclosure on biodiversity means disclosure on forests.



Visibility of corporate performance towards eradicating deforestation is getting ever clearer, with a record number of companies now disclosing on their progress.

A record-breaking **1,043** companies reported through CDP on their management of deforestation in 2022.

→ Almost a **300%** increase on 2017.



Companies are disclosing substantial exposure to risks from deforestation but mitigating these risks is seen as relatively inexpensive.

Nearly two in every three reporting companies identify some level of forest-related risks.

The total potential financial impact from forest-related risks is reported at over US\$78.6 billion¹ while the complete cost of responding to all identified forest-related risks is estimated at only US\$5.9 billion².

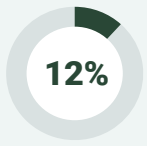
On average this is nearly US\$300 million at risk, versus US\$17.4 million to respond per reporting company.

¹ Reported by 269 companies.

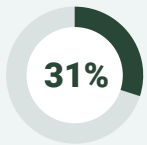
² Reported by 342 companies.

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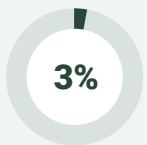
Despite recognizing risks, only a small group of companies claim to be on track to eradicating deforestation from their supply chains.



Around one in ten companies monitor their deforestation/conversion footprint of their full consumption in their supply chain³ and report more than 90% of total volume verified as deforestation- and/or conversion-free and in compliance with no-deforestation policies or commitments.



Only a third of companies have board-level oversight and competence of forest-related issues with management-level responsibility for both assessing and managing forests-related risks and opportunities.



Barely any companies are conducting comprehensive forest-related risk assessments including mapping and reporting locations of operations and suppliers⁴.

Companies taking action on forests have a head start on increasing nature-related market expectations and growing risks.

5

Improvements on previous years are visible, but the slow rate of transition to no-deforestation is leaving companies and financial institutions exposed to risks.

European companies tend to perform best but a group of Latin American companies also stand out for achieving high levels of compliance and monitoring.

North American companies perform least well and are most exposed to forest-related risks.

No single industry is showing exceptional performance on addressing deforestation but materials companies are performing better than others.

Retail companies perform worst when looking at comprehensively converting their policies into action and missing opportunities to mitigate their exposures.

6

Companies achieving no-deforestation will be presented with significant opportunities in a future net-zero nature positive economy, but to capitalize on them companies and financial institutions need to act quickly.

Over US\$ 58 billion in forest-related opportunities were identified by 231 companies in 2022. This represented just 29% of all those reporting, so accounts for just a fraction of potential gains.

Only by recognizing the central role deforestation plays in climate and nature-related risks and broadening strategies to address it in transition plans can opportunities be realized, and risks mitigated.

³ For at least one of the commodities they source. Only applicable to processors, traders, manufacturers or retailers.

⁴ For at least one of the commodities they source.

Introduction

Forests are fundamental to businesses and impact many biodiversity, climate and nature-related risks and goals. A resilient economy cannot be accomplished without progress on deforestation.

Forests are at the heart of our economy. Recognition of the role forests play in climate regulation and biodiversity losses continues to rise, yet forests continue to be cleared.

Over half of the world's GDP is estimated to be moderately or highly dependent on nature and its services⁵. Our natural ecosystems, including forests, underpin the global economy by providing a wealth of services that businesses and financial markets rely on. Apart from regulating the climate and removing greenhouse gas (GHG) emissions from our atmosphere, forests help supply water, control pollution, support pollination and healthy soils, protect people, and provide wood-based products and livelihoods⁶. They are some of the richest biological areas on Earth and as such, efforts to address nature loss and nature-related risks cannot be accomplished without progress on deforestation.

The total value of the world's forests is estimated to be at least US\$150 trillion—nearly double the value of global stock markets⁷. Forests have a net carbon absorption of around 7.6 billion tonnes of CO₂e per year⁸, equivalent to the fossil fuel and industry emissions from the USA and EU27 in 2021⁹. They are not only a cost-effective solution to the climate crisis but are also fundamentally important to business continuity, revenues and growth. The value of just the environmental services forests provide to businesses and people outside of their climate regulatory function is between US\$1-3 trillion; more if their role in preserving biodiversity and soil nutrient cycling could be easily quantified¹⁰.

Everyone ultimately depends on the services provided by forests to some degree. Sectors such as forestry, agriculture or food have a clear and direct dependency on forests through direct extraction of resources and the ecosystem services they provide. The relationship and consequences for secondary and tertiary industries can be difficult to grasp and can therefore be undervalued.

5 World Economic Forum. (2020) Nature Risk Rising. https://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf.


6 de Groot, R., Brander, L., van der Ploeg, S., Costanza, R. (2012) Global estimates of the value of ecosystems and their services in monetary units. *Ecosystem services*. 1(1). <https://doi.org/10.1016/j.ecoser.2012.07.005>.

7 Kappen, G. et. al. (2020) The Staggering Value of Forests—and How to Save Them. <https://www.bcg.com/publications/2020/the-staggering-value-of-forests-and-how-to-save-them>


8 Harris, N. L. et al. (2021). Global maps of twenty-first century forest carbon fluxes. <https://doi.org/10.1038/s41558-020-00976-6>.

9 Our World in Data based on the Global Carbon Project. (2022) <https://ourworldindata.org/grapher/annual-co-emissions-by-region>.

10 Kappen, G. et. al. (2020) The Staggering Value of Forests—and How to Save Them. <https://www.bcg.com/publications/2020/the-staggering-value-of-forests-and-how-to-save-them>.



Nearly four million hectares of pristine forests were destroyed last year leading to the release of 2.5 Gt CO₂e - equivalent to the annual fossil fuel emissions of India.



Nevertheless, industries such as chemicals, retail, consumer goods and lifestyle still have 'hidden dependencies' on forests throughout their supply chains. As nature, including forests, loses its capacity to provide such services because of increased deforestation, business could suffer significant losses, putting revenue and value at risk. As deforestation continues and business revenues are hit, financial institutions also face risks to returns, stranded assets and limited diversification and investment opportunities. Therefore, it is important that they support companies to transition with the right market mechanisms.

Despite their value, forest loss remains high. Tropical regions, rich in biodiversity and carbon, lost 11 million hectares or over 15 million football fields of tree cover last year. This includes nearly four million hectares of pristine forests that led to the release of 2.5 Gt CO₂e, equivalent to the annual fossil fuel emissions of India¹¹.

Key global agreements reached in 2022 signal that rapid action to halt deforestation will be required by companies and financial institutions. **At COP27, governments, financial institutions and companies from around the world took steps to cut deforestation and increase forest conservation.** Financial institutions signed up to the Commitment on Eliminating Agricultural Commodity-driven Deforestation by 2025 and published shared investor expectations for companies. Leading cattle and soy traders signed up to the commodity trader's roadmap to stop deforestation in the Amazon. The European Union drove forward new regulation to stop deforestation-linked commodities being imported into its market.

A new Global Biodiversity Framework was agreed at CBD COP15 - a landmark agreement to protect biodiversity, ecosystems and indigenous land rights that includes a requirement for governments to ensure companies and financial institutions assess and disclose their impacts, dependencies on biodiversity. With deforestation one of the largest drivers of biodiversity loss, disclosure on biodiversity means disclosure on forests. Many of the Framework's other targets also relate to forests, including Target 1 on ending losses of ecosystems, Targets 2 and 3 on the restoration and conservation of ecosystems, Target 10 on sustainable agriculture, aligning public and private financial flows to halt and reverse nature loss by 2030 (Goal D/Target 14) and Target 15 on monitoring and disclosing on environmental risks, dependencies and impacts.

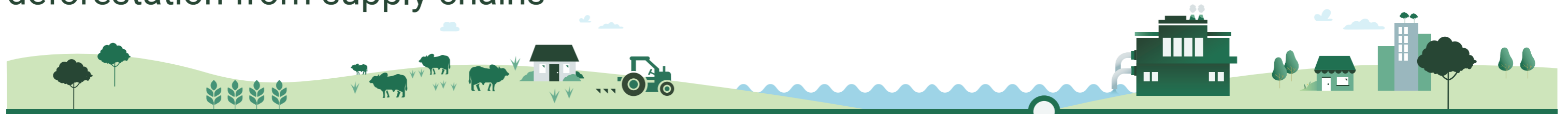
This is all part of the growing momentum to address deforestation and other nature-related risks in recognition of the fundamental role forests play in the climate and biodiversity emergencies.

¹¹ World Resources Institute. (2022) Forest Pulse: The Latest on the World's Forests. <https://research.wri.org/gfr/latest-analysis-deforestation-trends>

CDP's Forests KPIs

Essential actions needed to remove deforestation from supply chains

Companies disclosing through CDP are assessed on governance, strategies and implementation measures against 15 deforestation management Key Performance Indicators (KPIs). The indicators track corporate performance against essential actions needed to remove deforestation from supply chains¹². CDP's 15 forests KPIs are strongly based on the 12 Core Principles of the Accountability Framework.



Governance

1 Board-level oversight

Companies where key board member has oversight of forest-related issues, at least one board member has competence on forests-related issues, forest-related issues are integrated into key governance mechanisms, there is management-level responsibility for both assessing and managing forests-related risks and opportunities, and forests-related issues are reported to the board at least quarterly.

2 Policies

Companies with either a publicly available general or commodity specific company-wide no-deforestation policy with social elements, remediation and restoration that include timebound milestones and targets.

3 Commitments

Companies with a public no-deforestation (no conversion of natural ecosystems, zero gross deforestation/no deforestation) forests-related commitment with social elements, remediation and restoration that is timebound, set to be completed by 2025, includes a cutoff date before 2020, with FPIC, covers 100% of production/consumption and applies to all relevant operations.

Strategy

4 Strategy

Companies that integrate forest-related issues into all parts of their long-term strategic business plans: financial planning, long-term business objectives and strategy for long-term objectives.

Risk management

5 Risk assessment

Companies who conduct a comprehensive¹⁴ forest-related risk assessment, map their entire value chain and report locations of operations and suppliers.

Supply chain engagement

11 Smallholders

Companies working with smallholders to support good agricultural practices and reduce deforestation and/or conversion of natural ecosystems by providing them with financial/commercial incentives or technical assistance to them to help achieve this.

12 Direct suppliers

Processors, traders, manufacturers and retailers working with direct suppliers to support and improve their capacity to comply with forest-related policies, commitments, and other requirements including supporting suppliers to set their own no deforestation/conversion commitments across their entire commodity operations and develop public time-bound action plans with clear milestones and are providing financial/commercial incentives or technical support to help them achieve this.

Measuring & targets

6 Certification

Companies with at least 90% of total production/consumption volume of a commodity certified in a no-deforestation compliant certification.

7 Traceability

Companies that can trace more than 90% of their production/consumption volume of a commodity back to at least municipality or equivalent level.

8 Targets

Companies that have achieved or are making linear progress towards targets to source 100% no-deforestation certified commodities.

Companies that have achieved or are making linear progress towards targets to trace 100% of supply back to at least municipality or equivalent level.

9 No conversion/ no deforestation commitment compliance

Companies that have either a no-deforestation policy or comprehensive commitment and have a system to control, monitor, or verify compliance and this system covers all relevant direct operations or supply chains and report more than 90% of total volume in compliance, more than 90% of total volume verified as deforestation- and/or conversion-free, and monitor the deforestation/conversion footprint of their full consumption in their supply chain if they are a processor, trader, manufacturer or retailer.

10 Legal compliance

Companies that produce or source commodities from regions with a high deforestation risk and assess own compliance and/or the compliance of your suppliers with forest regulations and/or mandatory standards.

13 Beyond first-tier suppliers

Traders, manufacturers or retailers working beyond first-tier suppliers to manage and mitigate deforestation risks through capacity building.

14 Forest-related external activities or initiatives

Companies participating in landscape (including jurisdictional) approaches to progress shared sustainable land use goals where the initiative has clear goals and monitored and publicly reported progress.

Ecosystem restoration & protection **15**

Companies supporting or implementing project focused on ecosystem restoration and protection with timely monitoring and measured outcomes.

¹² For more information on the CDP's forests KPIs please see: https://cdn.cdp.net/cdproduction/comfy/cms/files/files/000/007/008/original/KPI_Forest_FactSheet.pdf (TBC).

¹³ Includes commitments to operations in accordance with the UN Declaration on the Rights of Indigenous Peoples, remediate any adverse impacts on indigenous people and local communities, adoption of the UN International Labour Organization principles, resolution of complaints and conflicts through an open, transparent and consultative process, recognition of legal and customary land tenure rights, restoration and compensation to address past deforestation and/or conversion.

¹⁴ Full coverage of relevant operations with risks beyond 6 years considered and availability of forest risk commodities, quality of forest risk commodities, impact of activity on the status of ecosystems and habitats, social impacts, local communities are included in the assessment.

Disclosure



Disclosure

Visibility of corporate performance towards eradicating deforestation is getting ever clearer, with a record number of companies now disclosing on their progress.

A record-breaking **1,043** companies reported through CDP on their management of deforestation in 2022.








→ Almost a **300%** increase on 2017.

This result signals that forest-related disclosure is becoming an increasingly established practice and means that CDP holds the most comprehensive, standardized dataset on corporate deforestation risk exposure and management. The data is a vital tool for financial institutions that now have access to even more data to help inform better decision making.

Companies in the four key industries with the highest potential impact on forests: materials, food, beverage & agriculture, manufacturing, and retail represent 87% of reporting companies. Disclosing companies include:

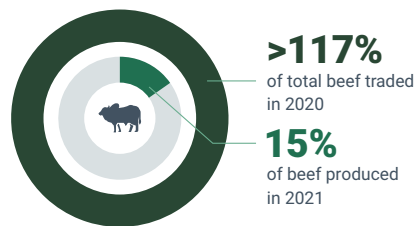
- ▼ **The world's largest palm oil traders and companies including:** Wilmar International Limited, IOI Corporation Berhad, Musim Mas Holdings Pte Ltd, Sime Darby Plantation Berhad, Cargill, Bunge, Archer Daniels Midland, Olam International, and Viterra (previously Glencore Agriculture), Golden Agri-Resources;
- ▼ **Many of the world's biggest brands who buy palm oil including:** Unilever, Colgate Palmolive Company, General Mills Inc., Procter & Gamble Company, PepsiCo, Inc., Mars, Hershey Company, Kellogg Company, The Kraft Heinz Company, L'Oreal, Reckitt Benckiser, Nestlé;
- ▼ **All three of the biggest traders dominating exports of soy from Brazil:** Cargill and Archer Daniels Midland, and Bunge – the world's largest oilseed processor;
- ▼ **Three of Brazil's biggest slaughterhouses:** JBS S.A, Marfrig Global Foods S/A and Minerva Foods.
- ▼ **The largest fast food operators:** McDonald's Corporation, Starbucks Corporation, Yum! Brands, Inc., Restaurant Brands International;
- ▼ **The biggest forest, paper & packaging companies:** International Paper Company, Mondi PLC, Kimberly-Clark Corporation, Oji Holdings Corporation, WestRock Company, UPM-Kymmene Corporation, Stora Enso Oyj, Smurfit Kappa Group PLC, Sumitomo Forestry Co., Ltd., Nippon Paper Industries Co Ltd., Amcor plc, Tetra Pak. Nippon Paper Industries Co Ltd., Amcor, and Tetra Pak.

In total, 810 companies disclosed on at least one of the seven high-risk commodities responsible for most agriculture-related deforestation, equaling 1,375 commodity level disclosures (Figure 1).

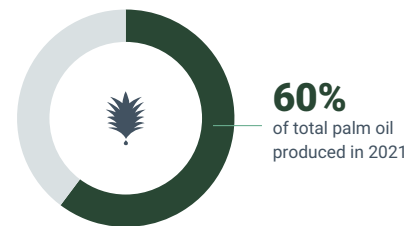
Commodity type	Proportion of companies reporting in 2022	Increase in reporting since 2020
 Timber products	74%	46%
 Palm oil	34%	49%
 Soy	23%	38%
 Cattle products	18%	30%
 Natural rubber	8%	49%
 Cocoa	7%	40%
 Coffee	6%	88%

Companies disclosing through CDP in 2022 represent significant proportions of production and trade. These companies reported:

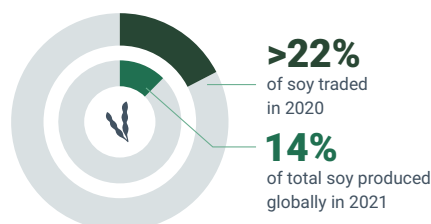
Consuming over **13.4 million** metric tons of beef. This represents:



Producing over **45.2 million** metric tons of palm oil. This represents:



Using over **57.4 million** metric tons of soybean products. This represents:

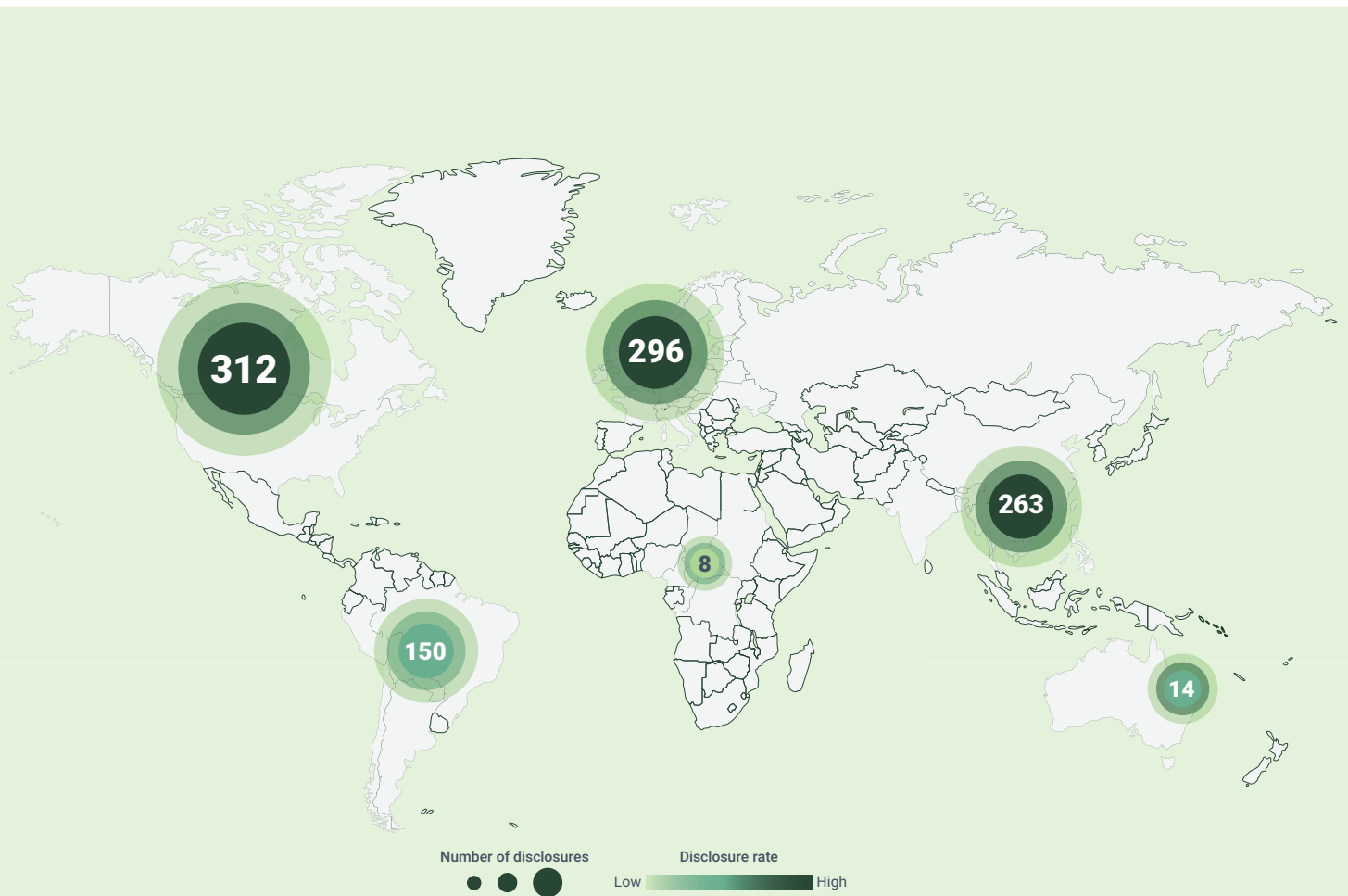


Producing over **386 million** metric tons of timber products. This represents:



* Trade and production data used for comparative scale only. Based on most recent available data. Reported consumption figure could include some double counting as commodities can be consumed at multiple points as they are processed down through the supply chain.

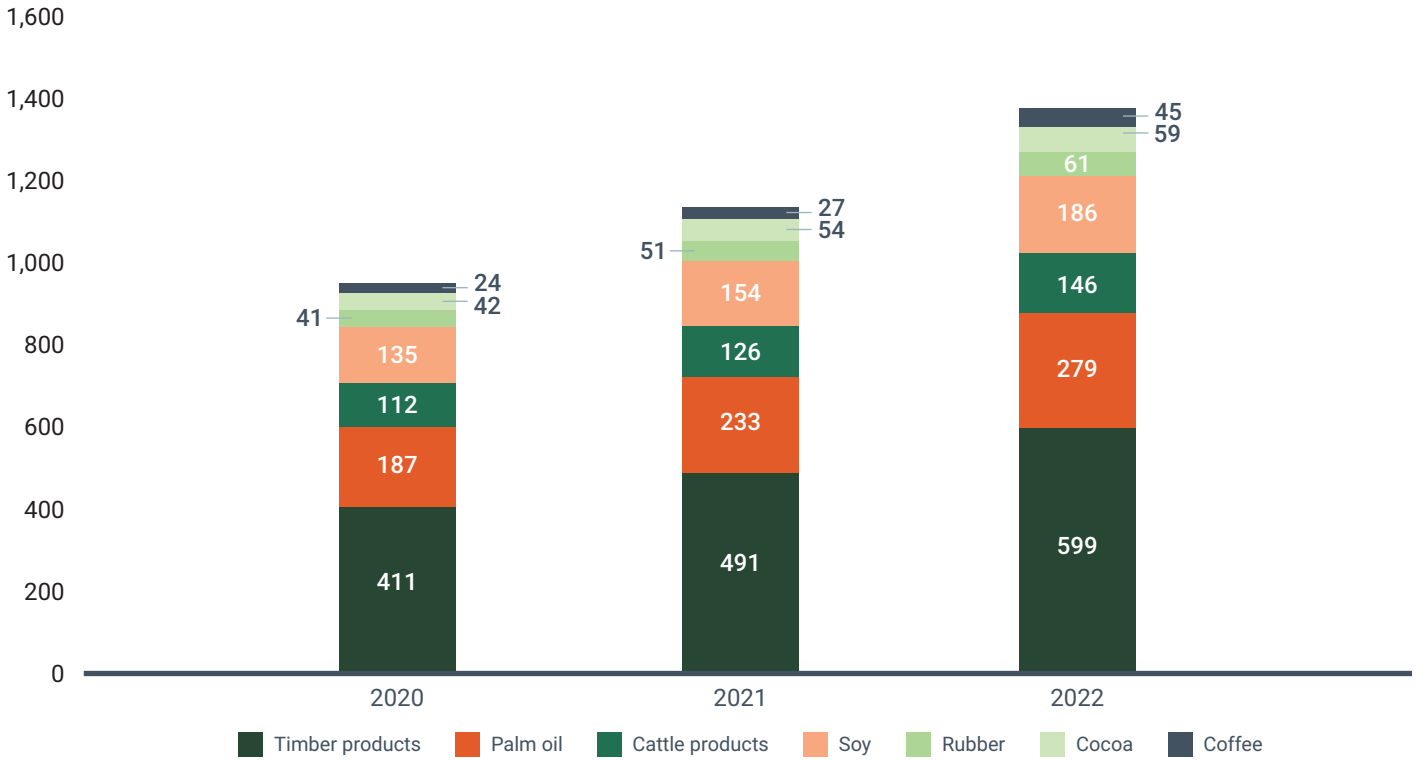
Reporting companies include 296 organizations based in Europe, 312 from the US and Canada, 263 from Asia, 150 from Latin America, only 8 companies from Africa and 14 from Oceania.



About CDP’s forests questionnaire

CDP’s forests questionnaire tracks corporate progress on eradicating deforestation from its operations and supply chains. Through CDP, companies and financial institutions can transparently demonstrate their progress and benchmark against peers. CDP’s forests questionnaire is aligned with the [Accountability Framework](#)’s principles, definitions, and guidance. Companies that follow the Accountability Framework will be better able to report through CDP, and companies that disclose comprehensively through the CDP forests questionnaire will also be reporting effectively against the Accountability Framework. This aligned approach can help companies meet the expectations of their buyers, financial institutions, and other stakeholders.

Figure 1. Commodity disclosures by companies through CDP’s forests questionnaire in 2020, 2021 and 2022



The risks from deforestation

A large, bold white number '2' is centered in the lower right portion of the page. The background is a dark, atmospheric photograph of a forest. In the foreground on the left, there is a small, rustic hut with a thatched roof. The trees in the background are mostly bare, suggesting a dry or deforested area. The overall tone is somber and environmental.

2

The risks from deforestation



40 of the world's largest food and agricultural firms could lose up to

26%

of their value by 2030.

As nature continues to deteriorate, businesses are progressively more at risk from not only growing reputational and legal risk but operational and financial as direct inputs disappear and the ecosystem services, on which businesses depend, stop functioning¹⁷.

Companies are disclosing substantial exposure to risks from deforestation but mitigating these risks is seen as relatively inexpensive.

Recent analysis has highlighted that deforestation threatens to be the 'new coal' in financial institutions' portfolios, as exposure to companies who drive it represents considerable financial, regulatory, and reputational risks¹⁵. The accelerating climate and nature transition and related incoming policy and demand shifts could mean that 40 of the world's largest food and agricultural firms worth over USD\$2 trillion lose up to 26% of their value by 2030, with a sector average hit of over 7%¹⁶. This is equivalent to USD\$150 billion in losses to financial institutions and would be a permanent, non-cyclical loss comparable in magnitude to value loss following the 2008 financial crisis.

Destruction of natural ecosystems such as forests creates risks for businesses and therefore financial institutions through a) the dependency of business on nature, b) fallout of business impacts on nature (losing customers or entire markets, costly legal action and adverse regulatory changes due to direct and indirect impacts of business activities on nature) and c) through the wider impacts of nature loss on society¹⁸.

Risks from deforestation can be non-linear and are systemic with the risks of breakdown of the entire system, rather than the failure of individual containable parts. Nature-related systemic risks such as deforestation have modest tipping points that combine to produce large failures from interacting physical and transition risks – one loss triggers a chain of others and stops systems from recovering having a devastating impact on companies and financial markets that depend on them.

Current rates of deforestation mean we are dangerously close to this cascade. If the rate of forest loss in the Amazon continues, and 20–25% of the forest is lost, the region could reach a tipping point and parts of the forest would die off changing into a non-forest ecosystem¹⁹. Large-scale Amazonian deforestation not only impacts the area, but it also alters regional weather patterns²⁰, reducing regional water availability and thus agricultural productivity.

15 Race to Zero. (2022) Assessing The Financial Impact Of The Land Use Transition On The Food And Agriculture Sector. <https://climatechampions.unfccc.int/wp-content/uploads/2022/09/Assessing-the-financial-impact-of-the-land-use-transition-on-the-food-and-agriculture-sector.pdf>.

16 Ibid.

17 World Economic Forum. (2020) Nature Risk Rising. https://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf.

18 Ibid.

19 Lovejoy, T.E. and Nobre, C. (2019) Winds of will: Tipping change in the Amazon. <https://advances.sciencemag.org/content/advances/5/12/eaba2949.full.pdf>.

20 Nobre, C. et al. (2016) Land-use and climate change risks and the need for a novel sustainable development paradigm., <https://doi.org/10.1073/pnas.1605516113>.

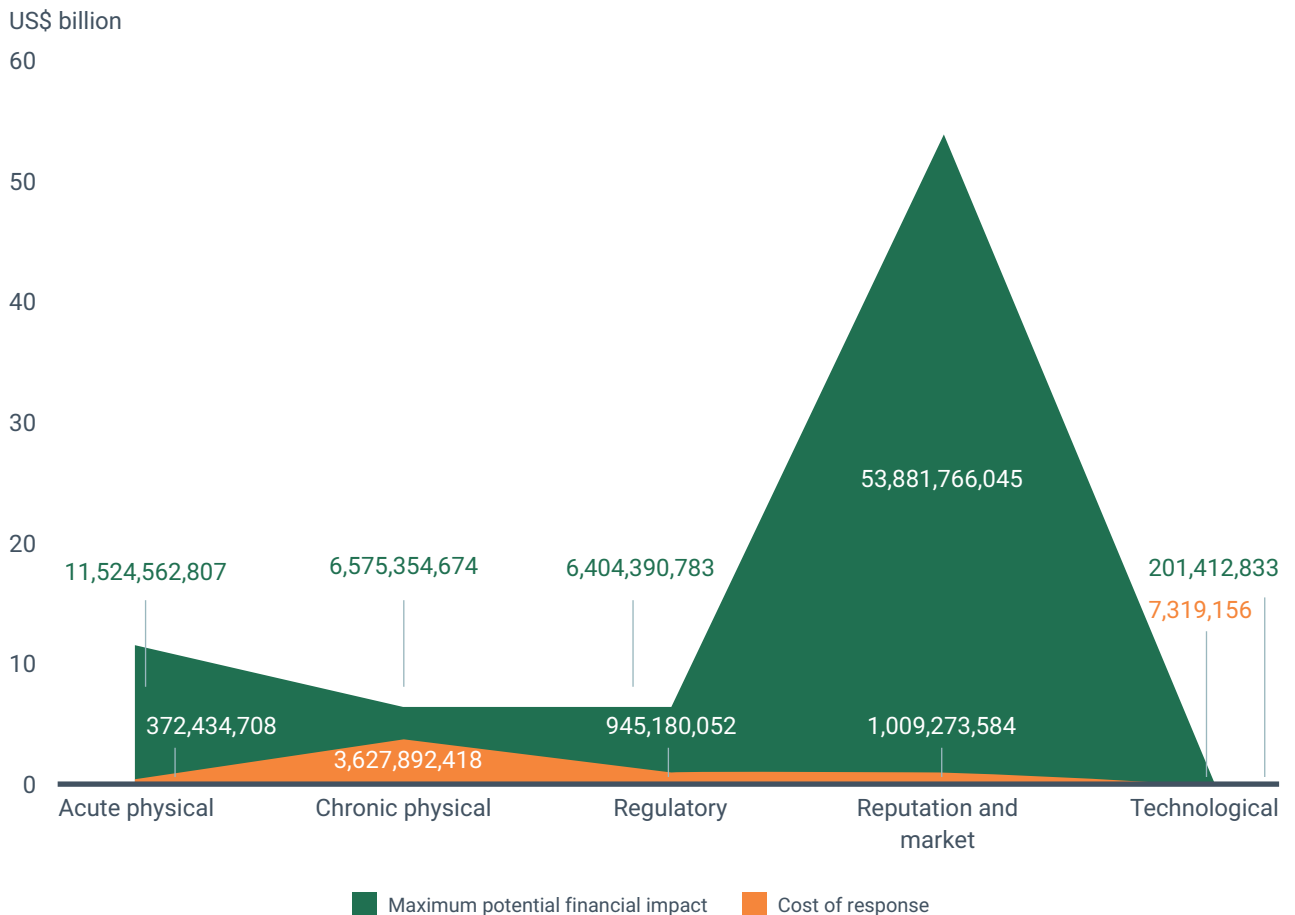


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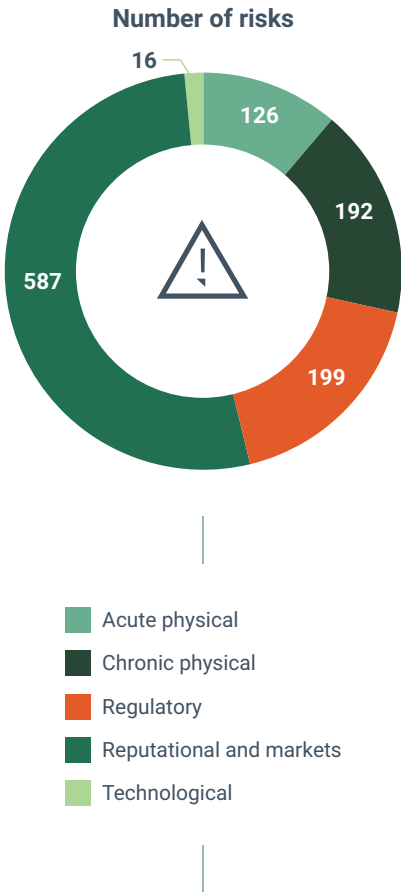
If the forest dies off, droughts will increase in duration in the region and annual agricultural production would face losses of US\$422 million in Brazil alone²¹. As Brazil is a significant global exporter of food, a sharp decline in Brazil’s agricultural output could increase the volatility of food prices globally.

While vastly underreported, CDP data shows companies are exposed to substantial forest-related risks. **Nearly two in every three reporting companies identify some level of forest-related risks.** However, only one in three companies (269) were able to quantify these risks with the total potential financial impact from forest-related risks reported at over US\$78.6 billion. Responding to these risks is seen as relatively inexpensive with the complete cost of responding to all identified forest-related risk estimated at only US\$5.9 billion²², or around 7.5% of the potential loss (Figure 2). **On average this is nearly US\$300 million at risk, versus US\$17.4 million to respond per reporting company.**

Figure 2. Potential financial impact of reported forest-related risks (n=269) and cost of response (n=342) in US\$

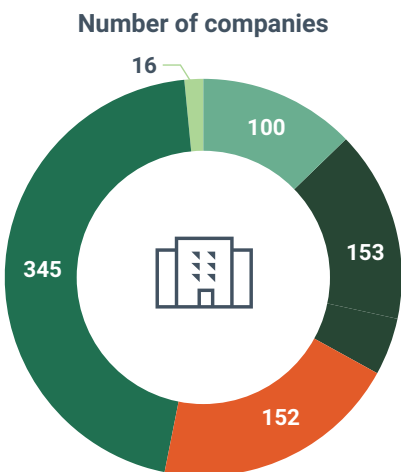


21 Strand, J. et al. (2018) Spatially explicit valuation of the Brazilian Amazon Forest’s ecosystem services. <https://www.nature.com/articles/s41893-018-0175-0>.
 22 Reported by 342 companies.



Reputational and market risks continue to be the most frequently identified risks by companies (52%), followed by physical risks (acute and chronic), regulatory and lastly technological risks (Figure 3). In recognition of the systemic role forests play, longer-term environmental shifts that are here to stay, dominate concerns around physical risks with half as many companies identifying chronic versus acute physical risks from deforestation. These chronic risks are also best avoided as they are reported to be the costliest to respond to. Most drivers of all risks occur in the supply chain (52%), underlying the importance of good supply chain engagement in managing deforestation risk.

But this is just the tip of the iceberg – not all companies assess their exposure to forest risks or price these risks. A quarter of companies (23%) do not include forest-related issues in their risk assessments. Another quarter of companies (23%) do not report risks as they are yet to even evaluate whether they are exposed to forest-related risks for a specific commodity. Without assessing risk, it is impossible to implement an appropriate mitigation response, leaving these companies exposed and in the dark. Including deforestation in risk assessments is vital as nearly all companies that undertook a forest-related risk assessment for a commodity identified risks associated with deforestation for that commodity (84%). A lack of awareness or error in judgement could also explain why only roughly half of the companies (54%) reporting forest-related risks were able to quantify them.



84%



of companies that undertook a forest-related risk assessment for a specific commodity identified risks associated with deforestation.

Raising awareness and technical capability to quantify forest-related risks could be a key component of scaling action.

It is surprising that more companies are not identifying forest-related risks, given that science and policy is increasingly pointing out with growing urgency that forests play a fundamental roll in our economy and solving the climate and biodiversity crises. Forests-related risks are still under-reported and underestimated. Raising awareness and technical capability to quantify forest-related risks could be a key component of scaling action. Financial institutions and companies need to act now to protect value. A rapid land use transition is imminent and will be as profound as the energy transition. To alleviate these risks and take advantage of potential opportunities, it is vital that financial institutions understand, account for and mitigate forest-related risks and help ensure companies are doing the same.



Types of forest-related risks²³

1 Transition risks

Types of transition risks include: regulatory, reputational, market and technological risks.

Nature-related transition risks (including forest-related risks) are the result of a misalignment between a company's management and the changing regulatory, political or societal landscape in which it operates as a transition to a deforestation-free, lower-carbon economy occurs. The nature, speed, and focus of the changes pose differing levels of financial risk to companies.



2 Physical risks

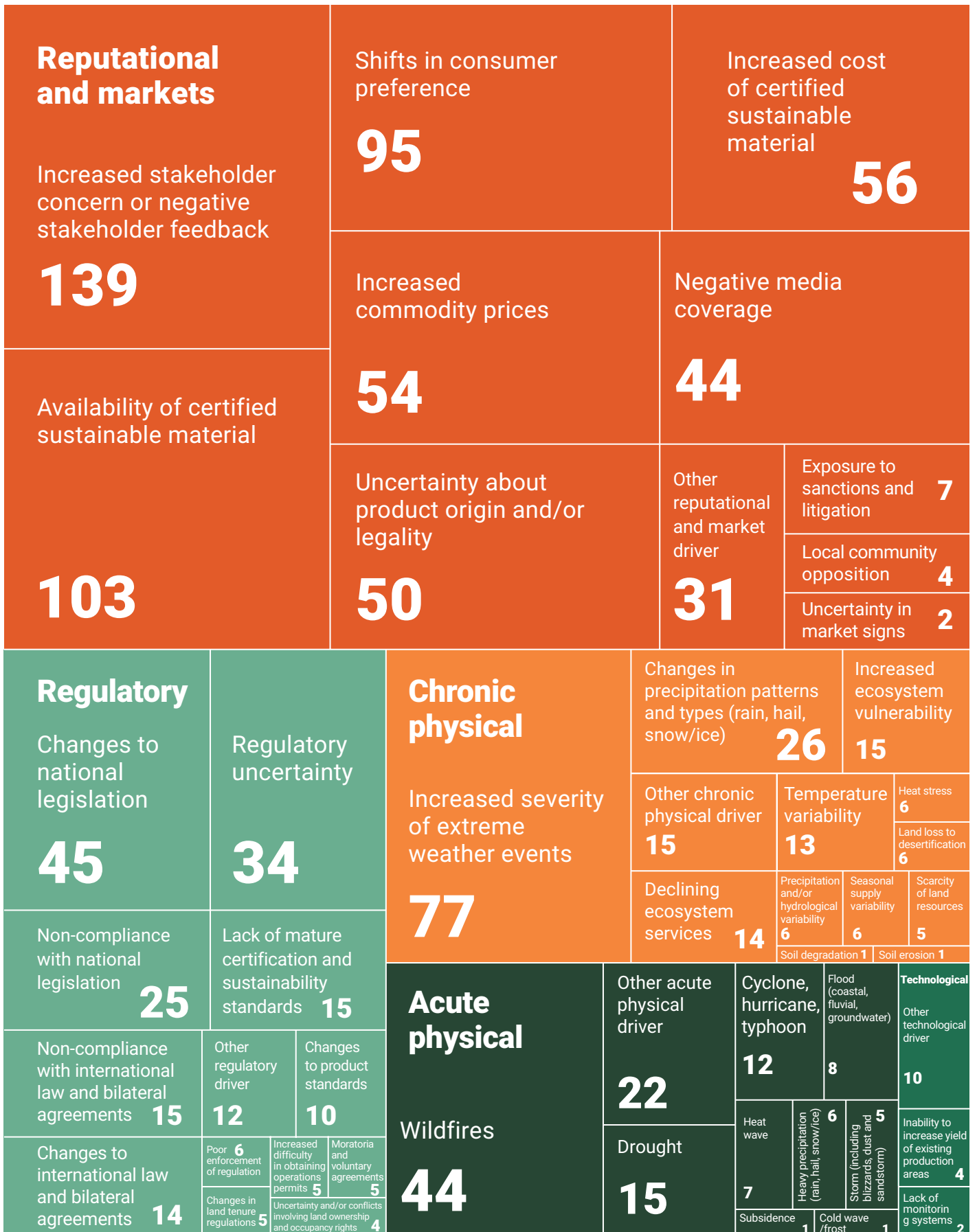
Types of transition risks include: acute or chronic.

Acute risks are short-term or event-based such as wildfires, drought or flooding. Chronic risks are long-term changes in environmental conditions such as changing climatic patterns, reduced land suitability, ecosystem vulnerability or ongoing water stress. Physical risks can have financial implications for companies by directly damaging assets and indirectly impacting supply chains.



²³ Adapted from: Task Force on Climate-related Financial Disclosures. (2020) Guidance on Risk Management Integration and Disclosure https://assets.bbhub.io/company/sites/60/2020/09/2020-TCFD_Guidance-Risk-Management-Integration-and-Disclosure.pdf and Task Force on Climate-related Financial Disclosures. (2022) TNFD's definitions of risks <https://framework.tnfd.global/concepts-and-definitions/definitions-of-risks/>

Figure 4. Types of forest-related risks reported by risk driver. Size represents the frequency each driver was reported



Overview of the deforestation management landscape

An aerial photograph of a forest landscape, showing a mix of green trees and cleared areas. In the foreground, there are several large stacks of cut logs. A large, bold white number '3' is overlaid on the right side of the image.

3

Overview of the deforestation management landscape

Despite recognizing risks, only a small group of companies claim to be on track to eradicating deforestation from their supply chains.

A small group of companies are preparing well for the transition -

12% 

of companies (around 1 in 10) monitor their deforestation/ conversion footprint of their full consumption in their supply chain and report more than 90% of total volume verified as deforestation- and/or conversion-free and in compliance with no-deforestation policies or commitments.

This group of companies making progress on eliminating deforestation are on course to protect revenue, market share and growth. The ~90% that do not meet the mark are not preparing adequately for the economic and environmental transition and risk getting left behind.

In 2022, only 5% of companies achieved a CDP forests A score despite 12% of companies claiming to be on track to eradicating deforestation from their supply chains because CDP's scoring methodology assesses a company's complete disclosure (the level of detail and comprehensiveness in a response), as well as the company's awareness of environmental issues, its management methods, and progress towards environmental stewardship. In contrast, the CDP's forest-related KPIs provide further detail about where essential actions are being taken and where improvement is needed. A responder meeting all the KPIs will always have a good score, but a good score is not the end of the disclosure journey for companies and they may still need to take some essential actions. On the other hand, meeting a KPI does not guarantee an A. Of the 25 companies that received a CDP forests A score in 2022, 13 report being on track to eradicating deforestation from their supply chains for that commodity²⁵.

²⁴ For at least one of the commodities they source. Monitoring deforestation/conversion footprint only applicable to processors, traders, manufacturers or retailers.

²⁵ Monitor their deforestation/conversion footprint of their full consumption in their supply chain and report more than 90% of total volume verified as deforestation- and/or conversion-free and in compliance with no-deforestation policies or commitments.



Encouragingly, and in line with the need to protect and restore forests in order to achieve 1.5°C,

43%

of companies are engaging in targeted and monitored ecosystem restoration.

Disclosures show vulnerabilities are scattered throughout business (Figure 5). They start at the governance-level and increase throughout the risk identification and management stages.

Only



of companies have board-level oversight and competence of forest-related issues with management-level responsibility for both assessing and managing forests-related risks and opportunities.

Barely



of companies are conducting comprehensive forest-related risk assessments including mapping and reporting locations of operations and suppliers²⁶.

Without mapping and reporting locations of operations and suppliers, companies are opening themselves up to risks across their value chains. The strongest performance is seen on legal compliance, demonstrating the power of mandatory regulation as a lever for change. But it's not perfect and a quarter of companies (26%) still don't assess compliance with legally binding forest regulations or mandatory standards.

Around half of the companies are integrating forests into all parts of strategic business planning (53%). However, this is not supported by the implementation of those plans as demonstrated through the rest of company disclosures. Encouragingly, and in line with the need to protect and restore forests in order to keep warming at 1.5°C, 43% of companies are engaging in targeted and monitored ecosystem restoration, but this should go hand in hand with ending deforestation.

²⁶ For at least one of the commodities they source.

36%

of companies do not engage direct suppliers at all, and

49%

of them do not engage beyond their most immediate supplier.

For most companies, supply chain engagement is needed to successfully implement sourcing policies that meet social and environmental aims as deforestation often occurs upstream.



Most companies use supplier engagement to manage sourcing and risks.

But in many cases depth of engagement is shallow, hampering visibility of issues and opportunities for mitigation further upstream.

Companies taking action on forests have a head start on increasing nature-related market expectations and growing risks.

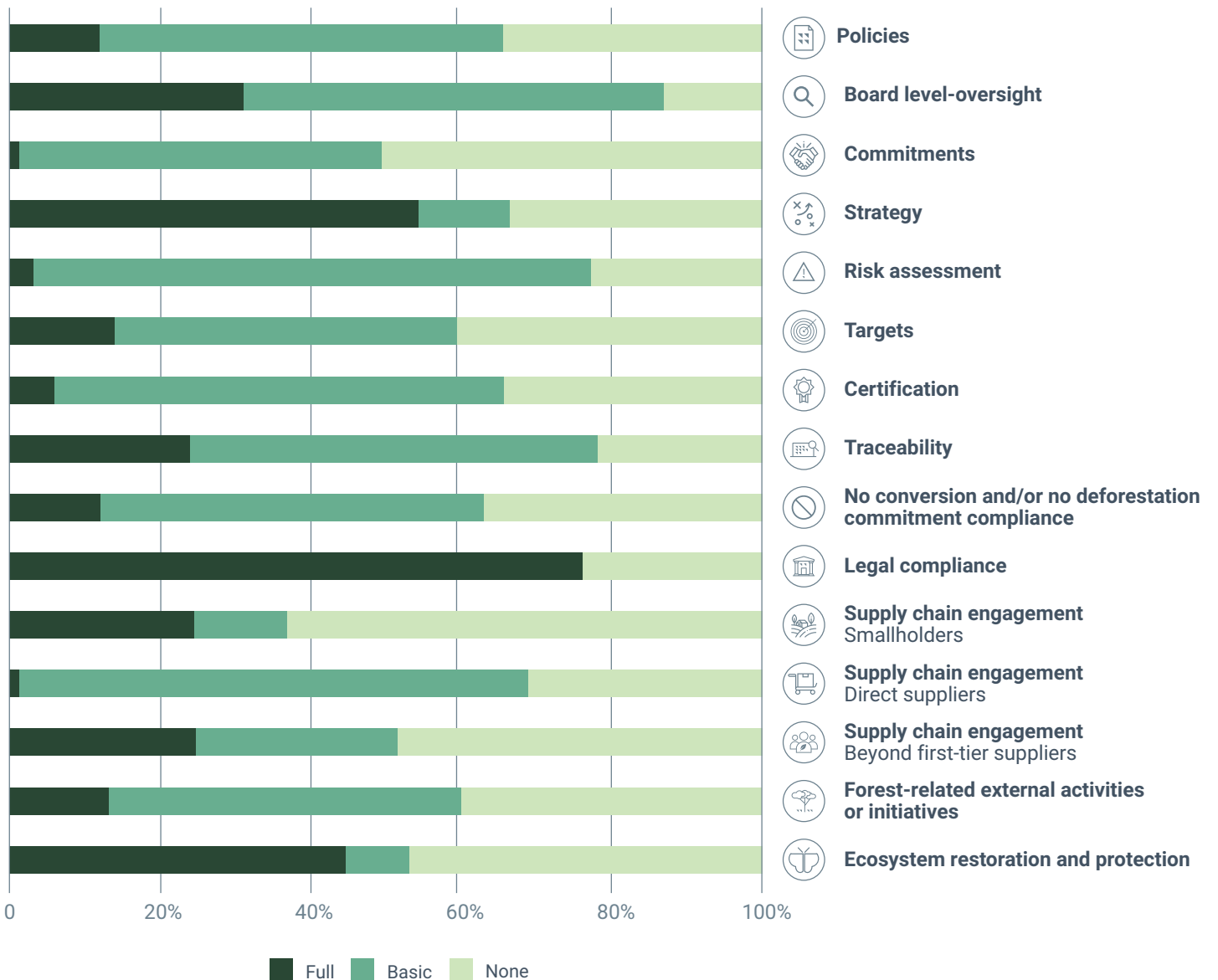
In terms of supporting positive change, as few as 1% of companies offer suppliers financial incentives, commercial incentives or technical support to help them set and implement their own timebound, no deforestation / conversion commitments across their entire commodity operations²⁷. Financial institutions could enable more profound supply chain engagement through clear expectations or innovative financial products.

Disclosure and action on deforestation has become one of the most mature parts of corporate nature-related risk management and gives a good indication of how ready companies are to step up and meet broader nature-related issues. These issues are being addressed through global voluntary and mandatory frameworks and initiatives such as the TNFD, GBF-15, SBTN, SBTi-FLAG, ISSB, EU-DR, UK Forest Due Diligence and the Accountability Framework. CDP will continue to align its disclosure platform with emerging guidance and frameworks to enable companies to remain compliant and report effectively.

²⁷ For at least one of the commodities they source

As it stands, current corporate performance is not enough in the face of incoming regulations and environmental limits. Only 81 companies have robust public commitments to end deforestation by 2025 for at least one commodity they produce/use, while only 10 companies have committed to do so whilst ensuring good social conditions and remediation is in place. Despite recognizing risks, most companies are not acting quickly enough to address them. This lack of change at pace leaves profits, investments and returns exposed. The small group of companies making progress on eliminating deforestation show the path towards protecting revenues.

Figure 5. Overall performance of companies against forest-related KPIs. Full attainment of a KPI represents a company achieving the KPI for at least one commodity they are disclosing on.



Performance breakdown

A large, bold white number '4' is positioned in the lower right quadrant of the page. The background is a dark, atmospheric photograph of a forested landscape with rolling hills and distant mountains under a hazy sky. The overall color palette is dominated by various shades of green and dark tones.

Performance breakdown²⁸

European companies tend to perform best.

A group of Latin American companies stand out, achieving high levels of compliance and monitoring.

Improvements on previous years are visible, but the slow rate of transition to no-deforestation is leaving companies and financial institutions exposed to risks.

By geography

Companies from four regions: Europe, North America (US and Canada), Asia, and Latin America represent 98% of companies disclosing through CDP's forests questionnaire in 2022.

European companies tend to perform best. These key importers and consumers of forest-risk commodities generally achieve the highest performance in eight out of 15 KPIs. They lead on governance, targets and supply chain engagement but only 17% of commodities are covered by at least 90% traceability to municipality. With the new EU Deforestation regulation receiving final approval in May 2023, European companies will be facing increased scrutiny on their management of deforestation in the coming months.

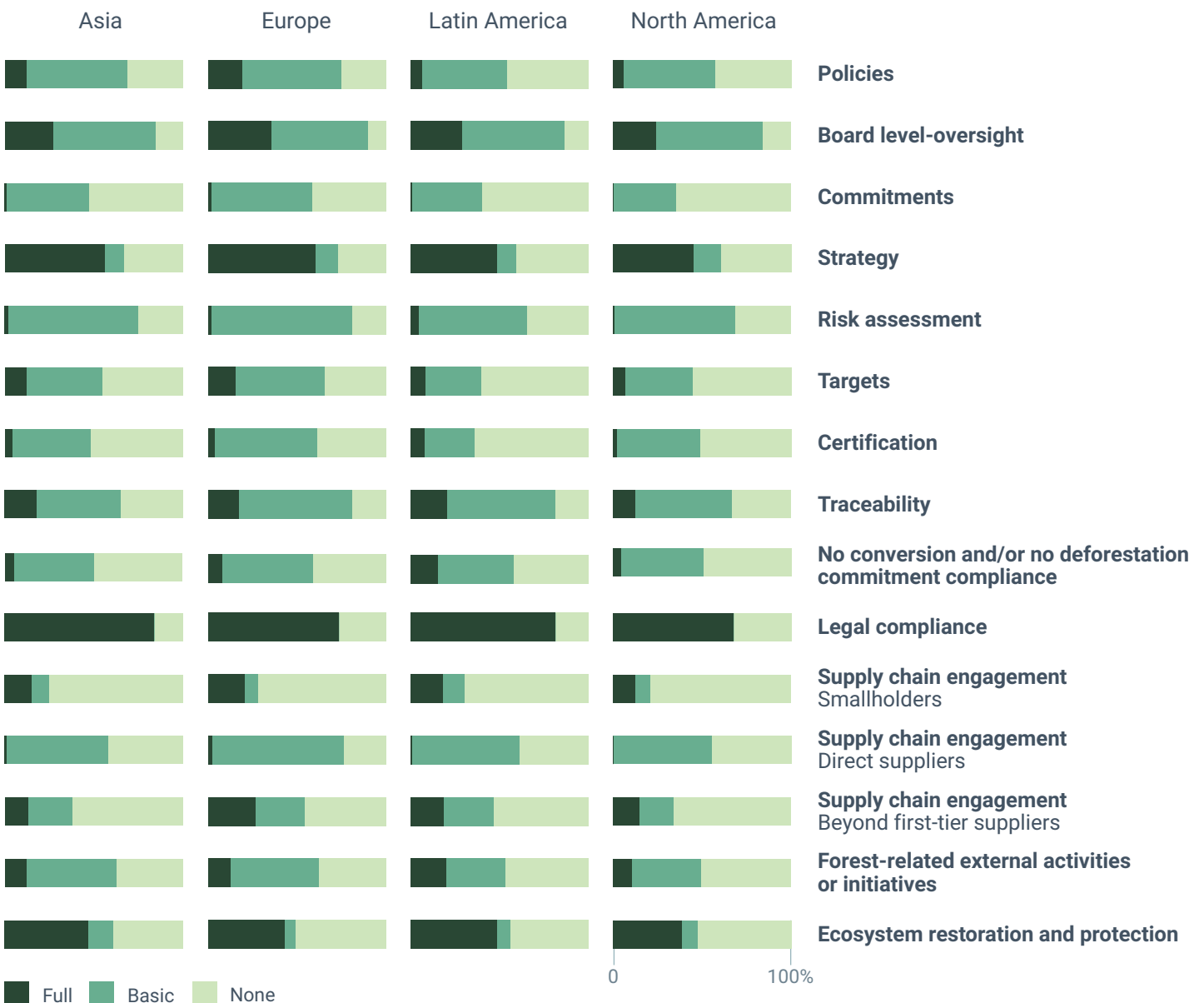
A group of Latin American companies stand out, achieving high levels of compliance and monitoring. Latin American companies overall show second best performance globally, achieving the highest performance in six of 15 KPIs. They lead on risk assessment and implementation metrics: certification, traceability, and no-deforestation/conversion compliance. Latin American companies operate in a continent home to significant tropical and sub-tropical forests and are involved in more restoration and conservation projects than companies from other regions. They are also strong on legal compliance and smallholder engagement yet only 15% of commodities produced or sourced by them are covered by rigorous no-deforestation policies.

Asian companies lead on legal compliance when compared to other regions. They are strong on policy, strategy, targets, traceability and restoration but only 5% of commodities produced or sourced are covered by high levels of no-deforestation/conversion compliance. Supply chain engagement is also low. Only 15% involve smallholder engagement, only 1% are supporting their direct suppliers through financial or technical assistance to set their own no deforestation/conversion commitments across their entire commodity operations and develop public time-bound action plans with clear milestones to help them achieve this. Only 12% are capitalizing on the opportunity to engage in landscape/jurisdictional approaches.

²⁸ Assessed using commodity level disclosures. Companies can disclose on a maximum of seven commodities through CDP. Taking all commodity-level disclosures into consideration individually as opposed to assessing the percentage of companies in each industry or region achieving a KPI for at least one commodity helps highlight gaps in performance where companies are exposed to forest risk commodities and are not managing deforestation.

North American companies perform least well and are most exposed to forest-related risks. They reported the lowest levels of performance in 13 of 15 KPIs. Only 29 of 454 commodities sourced by North American companies are covered by timebound no-deforestation/conversion public commitments – palm oil commitments are worst with only one company commitment. Only 1% have a rigorous forest-related risk assessment in place and as few as 5% have high levels of no-deforestation / conversion compliance. No North American company supports its direct suppliers with financial or technical assistance to set and implement their own deforestation management policies and plans across their entire operations and sourcing.

Figure 6. Performance of companies against forest-related KPIs by region.





Materials companies achieve the highest performance across

13/15
KPIs

By industry

No single industry is showing exceptional performance on addressing deforestation but materials companies are performing better than others.

Companies in four key industries: materials, food, beverage and agriculture, manufacturing, and retail have some of the highest potential impact on forests and are most dependent on their ecosystem services. These four industries also represent 87% of companies reporting on their management of deforestation through CDP. Their performance is therefore explored in more detail below.

Materials companies (including chemicals and wood and paper materials companies) lead the way, achieving the highest performance across 13 out of 15 KPIs. These companies have the highest proportion of comprehensive 2025 no-deforestation commitments, ambitious targets, detailed traceability and engagement with all supplier tiers as well as involvement in restoration/conservation projects. Yet only 4% of materials companies report over 90% of a commodity used is certified in a scheme that provides assurance of no-deforestation/conversion.

The **food, beverage and agriculture (FBA)** industry has the lowest levels of governance of deforestation – the lowest levels of competent board-level oversight of deforestation, public company-wide no-deforestation/conversion policies, comprehensive risk assessments, integration of forest issues into strategies. Importantly FBA companies also report low amounts of implementation – use of certification and no-deforestation/conversion compliance. Nevertheless, food, beverage & agriculture companies show progress by having the second highest proportion of ambitious targets, high levels of traceability, supply chain engagement and involvement in restoration/conservation projects. Agriculture is one of the biggest drivers of land-use change (including deforestation), habitat destruction, and biodiversity loss. Yet only 5% of FBA companies have high levels of no-deforestation / conversion compliance.

Manufacturing (companies producing wood products, packaging, automobiles, and tires) comprises of a handful of well performing companies alongside an underperforming majority. This well performing handful have good implementation and lead on the use of certification and no-deforestation/conversion compliance. The manufacturing industry also includes an underperforming majority with the lowest levels of deforestation governance – the lowest levels of no-deforestation/conversion policies – and lowest levels of ambitious targets and involvement in restoration/conservation projects. Engagement with suppliers is also low - overall, no company in the

Retailers have the highest levels of cattle product traceability and impactful engagement with direct and indirect suppliers on soy and cattle products. This is some much needed progress on these critical commodities from a key sector.

manufacturing industry is supporting their direct suppliers through financial or technical assistance to set their own no deforestation/conversion commitments across their entire commodity operations and develop public time-bound action plans with clear milestones to help them achieve this.

Retail companies perform worst when looking at comprehensively converting their policies into action and missing opportunities to mitigate their exposures. The retail industry includes supermarkets such as Carrefour and agricultural product wholesalers such as Bunge and Archer Daniels Midland that play significant roles as traders in the value chain, linking producers with consumers. Retailers report good governance of forest-related issues – a third of retailers report competent board-level oversight of deforestation issues while more than one in every 10 retailers have a no-deforestation/conversion policy with social and remediation elements. However, there is a lack of comprehensive timebound no-deforestation commitments among retailers and they show the lowest levels of implementation (targets, certification, traceability, compliance), comprehensive risk assessments and supply chain engagement. Promisingly, retailers have the highest levels of cattle product traceability and impactful engagement with direct and indirect suppliers on soy and cattle products. This is some much needed progress on these critical commodities from a key sector.



Urgent action is needed to end deforestation by 2025. While progress is happening the rate of the transition to a deforestation-free world is slow. If it is not sped up, nature will continue to deteriorate and businesses will become progressively more at risk as direct inputs and ecosystem services disappear while regulatory and market impacts grow. To end deforestation and get a head start on risks and incoming regulation and market expectations:



European companies would benefit from improving traceability.



More materials companies would benefit from following their peers by implementing good practices.



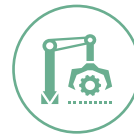
More Latin American companies would benefit from introducing rigorous no-deforestation policies.



Food, beverage & agriculture companies would benefit from increased good governance and to help achieve no-deforestation targets.



Asian companies would benefit from improving supply chain engagement including engagement with smallholders who are fundamental in the region.



The underperforming majority of manufacturing companies would benefit from emulating their well performing peers.



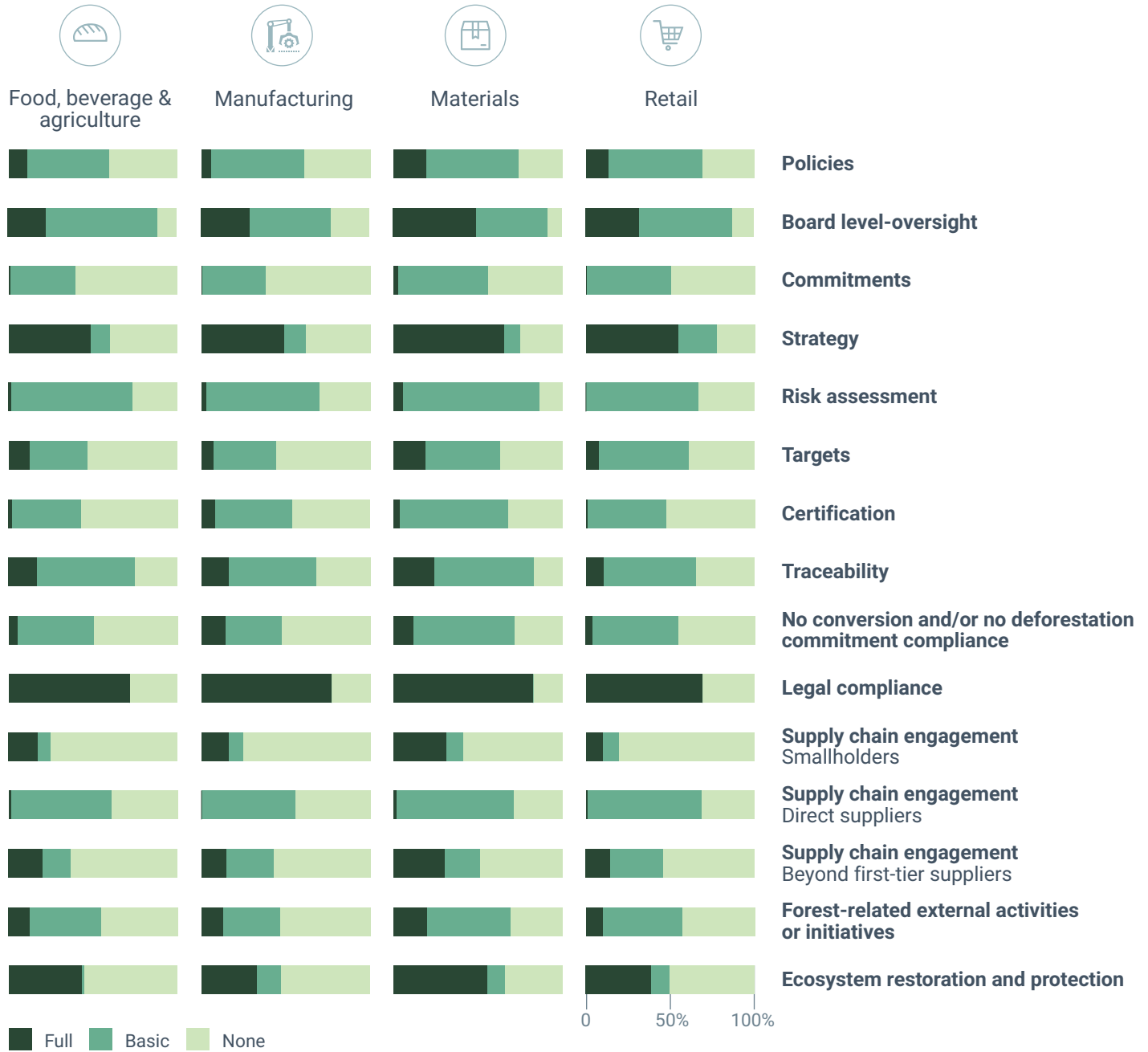
North American companies would benefit from improving governance and increasing engagement with direct suppliers ensuring they are deforestation-free across their entire supply.



Retailers would benefit from turning governance and policies into action.

All companies would benefit from comprehensive risk assessments that include mapping their suppliers, improving their no-deforestation/ conversion compliance and disclosing on their progress towards achieving supply chains that are deforestation- and conversion-free.

Figure 7. Performance of companies against forest-related KPIs by industry.



Moving towards a resilient economy

5

Moving towards a resilient economy

Only by recognizing the central role deforestation plays in climate and nature-related risks and broadening strategies to address it in transition plans can opportunities be realized, and risks mitigated.

Companies achieving no-deforestation will be presented with significant opportunities in a future net-zero nature positive economy, but to capitalize on them companies and financial institutions need to act quickly.

To meet the targets of the Paris Agreement, tropical forest deforestation needs to be slashed by at least 75% in the next two years, and halted in the next seven and around 300 million hectares of tropical forests restored. The annual economic gain from this transition is an estimated US\$895 billion by 2030, and US\$1.31 trillion by 2050, with the biggest driver of that gain being a reduction in environmental costs of US\$440 billion a year by 2030²⁹.

These opportunities can be seized by broadening strategies from a focus on emissions to integrating nature into transition plans. By encompassing other environmental impacts, dependencies and risks, companies and financial institutions can capitalize on the significant opportunities that the transition to a nature-positive economy presents.

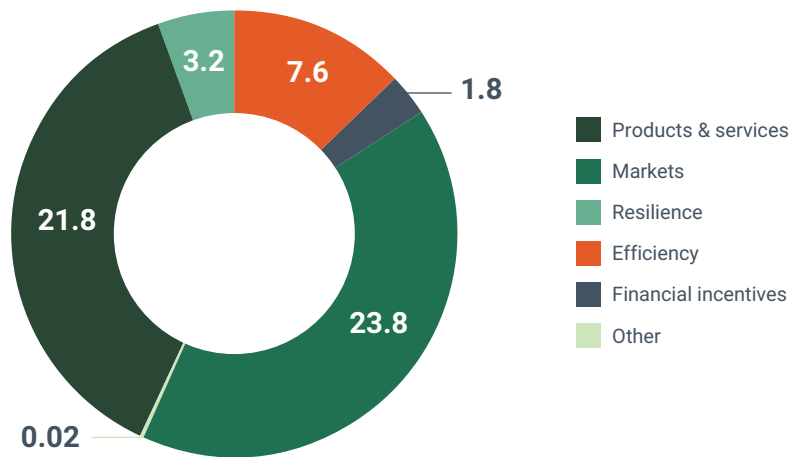
By recognizing and mitigating deforestation risks as part of this transition, companies can benefit from increased brand value, demand for certified / deforestation-free materials, availability of products with reduced environmental impact, supply chain transparency, R&D, innovation opportunities, expansion to new markets, and supply chain resilience (Figure 8). **Over US\$ 58 billion in forest-related opportunities were identified by 231 companies in 2022 (Figure 9)**. This represented just 29% of all those reporting, so accounts for just a fraction of potential gains. Companies need to be better at integrating forests and other nature-related issues into planning and strategies, as only then are they able to account for addressing deforestation, weigh opportunity costs and capitalize on incoming profitable opportunities.

²⁹ The Food and Land Use Coalition (FOLU). (2019) Growing better: Ten critical transitions to transform food and land use. <https://www.foodandlandusecoalition.org/wp-content/uploads/2019/09/FOLU-GrowingBetter-GlobalReport.pdf>.

Financial institutions can benefit from significant opportunities and more resilient returns by supporting and accelerating new markets (e.g. alternative proteins, deforestation-free materials, new assets and locations needing insurance coverage, financing products and solutions supporting sustainable forest risk commodity supply chains or forest restoration), investing in high-integrity nature-based solutions, increased diversification opportunities or even increased demand for products and services driven by shifts in consumer preferences or improved reputation.

Only by recognizing the central role deforestation plays in climate and nature-related risks and broadening strategies to address it in transition plans can opportunities be realized, and risks mitigated.

Figure 8. Potential financial impact of reported opportunities (US\$ bn)



Pressure to act and halt deforestation is mounting with growing regulation, global agreements and increasing market expectations. Financial institutions can help drive this through the following five steps³⁰ to ensure commodity-driven deforestation is eliminated from company operations and portfolios.



1

Understand material risks and exposure: Assess current clients and investees to identify which regions and sectors carry the highest risk and are exposed to deforestation and conversion risks. Understand wider portfolio risks from deforestation and opportunities arising from the land use transition. Employ scenarios³¹ that incorporate deforestation and the land use transition in portfolio assessments.



2

Develop zero deforestation policies that support the transition: Setting comprehensive publicly available portfolio policies that encourage finance to flow to companies that are committed to eliminating deforestation and conversion of natural ecosystems. NDPE, supporting remediation, restoration and protecting the rights and livelihoods of local communities can support de-risking multiple nature-related issues.



3

Conduct due diligence and monitor progress: Integrate forest-related issues into risk management and other decision-making processes. Assess both existing and potential clients on their deforestation and conversion risk profiles and mitigation efforts alongside other environmental issues e.g. significant commodity volumes traced and verified deforestation / conversion-free, alongside land sector emission inventories and SBTi FLAG target setting.



4

Engage clients and investees: Conduct company engagements to improve practices and drive the shift to just and inclusive deforestation- and conversion-free sourcing that includes Free, Prior, Informed Consent and supports smallholders. Ensure companies are supporting efforts to regenerate lost natural capital and pursuing necessary approaches to generate and protect long-term value.



5

Report transparently: Financial institutions and companies should publicly report on the progress they have made on identifying risks, managing them and capitalizing on opportunities. CDP disclosure for corporates and the financial services sector allows for transparent reporting of progress against good practice frameworks and standards.

³⁰ Adapted from Race to Zero. (2022) Assessing The Financial Impact Of The Land Use Transition On The Food And Agriculture Sector. <https://climatechampions.unfccc.int/wp-content/uploads/2022/09/Assessing-the-financial-impact-of-the-land-use-transition-on-the-food-and-agriculture-sector.pdf> and WWF. (2022) Seeing the forest for the trees - a practical guide for financial institutions to take action against deforestation and conversion risks. https://wwf.panda.org/wwf_news/?5852466/Financial-institutions-must-address-deforestation-and-conversion-risks

³¹ Such as the FPS + Nature forecast

Figure 9. Types of forest-related opportunities reported by companies according to type. Size represents the frequency by which each opportunity was reported



Examples of forest-related opportunities reported by companies in 2022

Maisons du Monde SA



Cattle products

- ▼ **Opportunity type:**
Resilience - Improved supply chain engagement
- ▼ **Estimated timeframe for realization:** 1-3 years
- ▼ **Magnitude of potential impact:** Medium-high
- ▼ **Likelihood:** Very likely
- ▼ **Maximum potential financial impact:** US\$22.5 million

Maisons du Monde believes that knowledge of its supply chain, the local context in the countries where the material comes from, and good relations with its suppliers are strategic and central to managing the risks associated with leather production. They use the Leather Working Group (LWG) standard to guarantee that tanning operations are carried out under environmentally friendly conditions that include traceability. This helps to combat the risk of deforestation. They expect that by 2025, 50% of products containing leather will come from LWG certified tanneries. This is expected to generate up to US\$ 22.5 million based on LWG leather representing 5% of the turnover of responsible products compared to 1% today. In 2021, Maisons du Monde saw sales of furniture products with a “responsible criterion” (FSC, PEFC certification, traced wood, recycled materials, etc.) increase 48% vs. 2020 generating sales of approximately US\$ 453 million.



Robertet SA



Cocoa

- ▼ **Opportunity type:** Markets - Expansion into new markets
- ▼ **Estimated timeframe for realization:** 1-3 years
- ▼ **Magnitude of potential impact:** Medium
- ▼ **Likelihood:** Likely
- ▼ **Maximum potential financial impact:** US\$7 million

Using more sustainable cocoa extracts in its formulae presents a real business opportunity for Robertet SA as consumers appetite for sustainable products grow. New business obtained through the promotion of products containing sustainably sourced cocoa is expected to yield up to US\$ 7 million, about 1% of its total revenue in 2021. This is a pessimistic projection and a minimum expectation for Robertet SA as cocoa flavor is the third most important flavor in the world after vanilla and strawberry.



The Spar Group Ltd



Coffee

- ▼ **Opportunity type:** Products & services - Increased brand value
- ▼ **Estimated timeframe for realization:** 4-6 years
- ▼ **Magnitude of potential impact:** Medium
- ▼ **Likelihood:** Likely
- ▼ **Maximum potential financial impact:** US\$109.6 million

SPAR's biennial market research and analysis has identified that its consumers expect to see it actively involved in environmental initiatives and pursuing carbon, water and waste management programmes. This analysis on consumer perceptions has also demonstrated that most of its consumers are increasingly aware of where their products are sourced and that their choice to shop at a retail store is influenced by the perceptions of retailer's actions to reduce environmental impacts. By using certified coffee, SPAR is driving sustainable consumption and is promoting sustainable coffee farming. Sustainable coffee farming drives resource efficiency around water, energy, fertilizers and pesticides; in line with SPAR's sustainability commitment to responsible living and resource stewardship. SPAR is also planning to launch its own Sustainable Label for SPAR branded products within next 2 years.

If SPAR fails to respond to these changing consumer preferences leading its customer base to shop elsewhere could lead to a 1-2% decrease in revenue, representing an opportunity valued at up to US\$ 109.6 million.



Godrej Industries



Palm oil

- ▼ **Opportunity type:** Markets - Increased demand for certified materials
- ▼ **Estimated timeframe for realization:** 1-3 years
- ▼ **Magnitude of potential impact:** Medium
- ▼ **Likelihood:** Likely
- ▼ **Maximum potential financial impact:** US\$78 million

There is a growing demand for products that are sourced ethically and sustainably – including palm oil. Increasing demand for sustainable palm kernel oil materials and deforestation-free supply chains is aligned with Godrej Industries’ sustainable palm oil policy. Godrej Industries estimate that the market for “green” or sustainably sourced palm products is 10-20% greater than their existing revenue representing an opportunity of up to US\$ 78 million.



Oji Holdings Corporation



Timber products

- ▼ **Opportunity type:** Resilience
- Improved climate change adaptation
- ▼ **Estimated timeframe for realization:** >6 years
- ▼ **Magnitude of potential impact:** High
- ▼ **Likelihood:** Virtually certain
- ▼ **Maximum potential financial impact:** US\$65.4 million

The Oji Group believes that sustainable forest management is an effective means of tackling climate change – the cause of extreme heat, heat waves, torrential rains, flooding, and reduced agricultural production. Expanding the amount of carbon sequestration and fixation in forests is also a significant opportunity for Oji Holdings Corporation to both supply the low-carbon products demanded by consumers and customers and to increase sales of their sustainable paper and paperboard products.

Oji Holdings Corporation aims to expand forest CO₂ fixation by more than 170 million tons, expand its overseas forest plantations by 400 thousand hectares and have a 100% acquisition rate of forest certification. At the end of 2021, the carbon stock in their production forests reached 109,335,000 CO₂ tons with an average net carbon stock since 2018 of 653,000 CO₂ tons/year, an opportunity Oji Holdings Corporation values at US\$ 65.4 million using their internal carbon price of 11,000 JPY/CO₂ tons.



Fuji Oil Holdings INC.



Soy

- ▼ **Opportunity type:** Markets
- Increased growth in the alternative protein market
- ▼ **Estimated timeframe for realization:** Current - up to 1 year
- ▼ **Magnitude of potential impact:** High
- ▼ **Likelihood:** Likely
- ▼ **Maximum potential financial impact:** US\$2.7 million

Fuji Oil Holdings Inc. views increased demand for plant-based food ingredients as an alternative to animal protein sources as an opportunity to increase earnings. Amid agreement on international environmental and social sustainability goals such as the SDGs and the Paris Agreement, there are concerns about the negative impact of beef cattle production on climate change. Meat substitute products using vegetable protein – plant-based meat, soy milk, vegetable cheese-like ingredients – have become a major trend worldwide. This movement is accelerating year on year due to the growing interest in the environment and health consciousness in the market. To capitalize on this, Fuji Oil Holdings Inc. has expanded sales of food ingredients made from soy, strengthened product development, built a new factory to increase production capacity and is actively working to develop new markets with new products and improve social recognition and promote the spread of plant-based foods. In FY2022, Fuji Oil Holdings Inc. expects their soybean processed materials business operating income to reach US\$ 22.8 million – an increase of around US\$ 2.7 million.



Appendix

6



		Overall by number of companies disclosing on at least one commodity			Overall by number of commodity level disclosures			 Timber products			 Palm oil			 Cattle products			 Soy			 Rubber			 Cocoa			 Coffee		
Attainment category		None	Basic	Full	None	Basic	Full	None	Basic	Full	None	Basic	Full	None	Basic	Full	None	Basic	Full	None	Basic	Full	None	Basic	Full	None	Basic	Full
KPI Type	Policies	34%	54%	12%	35%	54%	12%	31%	58%	11%	30%	53%	16%	41%	50%	9%	37%	51%	13%	48%	46%	7%	46%	46%	8%	47%	51%	2%
	Board-level oversight	13%	56%	31%	13%	58%	29%	12%	56%	32%	10%	61%	30%	17%	56%	27%	12%	59%	29%	20%	59%	20%	20%	59%	22%	15%	62%	23%
	Commitments	51%	48%	1%	54%	45%	1%	52%	47%	1%	46%	53%	1%	63%	37%	0%	57%	41%	2%	74%	26%	0%	66%	32%	2%	60%	40%	0%
	Strategy	34%	12%	54%	33%	14%	53%	31%	13%	56%	29%	13%	58%	40%	12%	49%	35%	15%	50%	46%	16%	38%	41%	22%	37%	38%	29%	33%
	Risk assessment	23%	74%	3%	26%	72%	2%	21%	76%	3%	22%	77%	1%	31%	66%	3%	29%	71%	0%	43%	57%	0%	37%	63%	0%	38%	62%	0%
	Targets	41%	45%	14%	47%	42%	11%	42%	48%	9%	32%	51%	17%	62%	27%	12%	58%	32%	11%	72%	28%	0%	61%	31%	8%	56%	40%	4%
	Certification	34%	60%	6%	49%	47%	3%	32%	61%	7%	29%	69%	3%	95%	5%	0%	73%	27%	0%	93%	7%	0%	69%	31%	0%	64%	36%	0%
	Traceability	22%	54%	24%	27%	57%	16%	26%	56%	18%	19%	60%	20%	27%	56%	17%	31%	59%	11%	59%	34%	7%	32%	59%	8%	29%	64%	7%
	No conversion	37%	51%	12%	46%	47%	7%	43%	45%	12%	36%	60%	4%	60%	36%	3%	53%	42%	4%	64%	36%	0%	58%	42%	0%	48%	52%	0%
	Legal compliance	24%	N/A	76%	26%	N/A	74%	20%	N/A	80%	26%	N/A	74%	33%	N/A	67%	25%	N/A	75%	42%	N/A	58%	36%	N/A	64%	33%	N/A	67%
	Supply engagement Smallholder	63%	12%	24%	75%	9%	16%	77%	7%	16%	63%	12%	25%	79%	8%	13%	85%	5%	10%	70%	18%	11%	74%	11%	15%	81%	8%	12%
	Supply engagement Direct suppliers	31%	68%	1%	36%	64%	1%	33%	67%	1%	28%	70%	2%	37%	62%	1%	44%	54%	2%	60%	40%	0%	40%	60%	0%	41%	59%	0%
	Supply engagement Beyond first-tier suppliers	49%	27%	25%	57%	25%	19%	57%	27%	15%	52%	24%	24%	58%	25%	17%	54%	21%	25%	68%	18%	13%	63%	18%	20%	56%	28%	16%
	Forest-external activities or initiatives	40%	47%	19%	47%	45%	12%	45%	48%	11%	34%	53%	16%	51%	40%	11%	53%	40%	10%	67%	25%	11%	68%	27%	7%	64%	29%	12%
	Ecosystem restoration & protection	47%	8%	45%	49%	9%	43%	46%	10%	44%	43%	9%	48%	55%	8%	37%	52%	5%	43%	57%	16%	27%	61%	2%	37%	58%	8%	35%

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About CDP

CDP is a global non-profit that runs the world's environmental disclosure system for companies, cities, states and regions. Founded in 2000 and working with more than 680 financial institutions with over \$130 trillion in assets, CDP pioneered using capital markets and corporate procurement to motivate companies to disclose their environmental impacts, and to reduce greenhouse gas emissions, safeguard water resources and protect forests. Nearly 20,000 organizations around the world disclosed data through CDP in 2022, including more than 18,700 companies worth half of global market capitalization, and over 1,100 cities, states and regions. Fully TCFD aligned, CDP holds the largest environmental database in the world, and CDP scores are widely used to drive investment and procurement decisions towards a zero carbon, sustainable and resilient economy. CDP is a founding member of the Science Based Targets initiative, We Mean Business Coalition, The Investor Agenda and the Net Zero Asset Managers initiative. Visit cdp.net or follow us @CDP to find out more.