

Our approach to engagement on natural capital

Investment Stewardship

BlackRock's approach to sustainability risks and opportunities, including natural capital, is based on our fundamental role as a fiduciary to our clients.

As awareness grows of the importance of natural capital to companies' business models and ability to generate long-term durable financial returns, we are interested in hearing from companies our clients are invested in about their strategies and plans for managing their impacts and dependencies on nature.

As we are long-term investors on behalf of our clients, how well companies navigate and adapt to long-term business dynamics like natural capital dependency and scarcity will have a direct impact on our clients' investment outcomes and financial well-being.

At BlackRock, the money we manage is not our own. It belongs to our clients – people saving over the long-term to meet their financial goals, like a secure retirement, a child's education, or buying a first home. Sustainability risks and opportunities tend to have a similarly long-term time horizon, and while companies in different sectors and geographies will have different impacts and dependencies on natural capital, as stewards of our clients' assets, we engage companies to understand how they identify and manage material natural capital factors.

BlackRock Investment Stewardship (BIS) plays a key role in advocating for the long-term interests of our clients and their investment outcomes. In order to assess companies' approaches to natural capital risks and opportunities, BIS meets with companies and, where we have authority to do so, votes proxies in the economic interests of our clients. Our engagements extend well beyond the proxy season to periodically assess companies' strategic and operational responses to material sustainability risk and opportunities, including natural capital. In our feedback to companies, we seek to offer a long-term perspective focused on durable profitability.

For the purpose of this commentary, BIS has highlighted three key components of natural capital as a means of organizing our views and the material financial linkages we consider to be most clearly linked to our clients' interests as long-term investors in public companies. Our commentary, [Climate risk and the global energy transition](#), discusses related issues through a climate risk lens. Organizing our views in this way is not meant to suggest that these themes are the only possible categorization of natural capital factors or that they are isolated from one another. For example, we acknowledge that biodiversity is interconnected throughout the discussion of forests, oceans, and fresh water, just as climate change impacts each of these key components of the biomes.¹ Natural capital discussions are increasingly centering on fresh water, oceans, land, and atmosphere, as well as the ecosystems, biodiversity, and the services they each provide.² Regardless of how they are organized, each natural capital realm plays an essential role in the overall health and functioning of the natural world, and therefore, companies' ability to continue to benefit from access to those assets.



UN SDGs alignment

We believe that there is significant intersection between many of the topics that we discuss with companies and aspects of these four [Sustainable Development Goals](#) (SDGs).

Natural capital as an investment issue

BIS assesses material environmental, social and governance factors as a component of a company's operational excellence and management quality. For companies whose business models have material dependencies or impacts on natural capital, the management of these factors can be a determinant of their ability to generate sustainable, long-term financial returns for shareholders, like BlackRock's clients.^{3,4} Natural capital encompasses the supply of the world's natural resources from which economic value and benefits can be derived – such as forests, oceans, and fresh water—and the biodiversity that supports these ecosystems.⁵ Given the growing pressures on the natural ecosystems from which many companies derive economic benefits, business will increasingly face financial risks and opportunities associated with their impacts and dependencies on natural capital. **As a result, we view the careful management of natural capital as a core component of a resilient long-term corporate strategy for companies that rely on the benefits that nature provides.**

The challenge of producing more goods with fewer inputs—e.g., land, water, raw materials—can provide opportunities for companies, while those that do not appropriately manage their impacts may face operational, regulatory, or reputational risks as ecosystems come under pressure.

Operational Risks

All companies depend on natural capital and/or impact it in some way. In the near-term, the ongoing depletion of natural resources is creating operational risks for companies and the global economy more broadly.⁶ More than half of global gross domestic product (GDP) – US\$44 trillion – is moderately or highly dependent on nature.⁷ As a result, one in five companies globally faces significant operational risks as a result of declining ecosystems.⁸

For these reasons, we believe that it is increasingly important to investors to understand how companies are minimizing their impacts on the natural capital on which their long-term financial performance depends.⁹ As long-term investors, we encourage companies to disclose how they have adopted or plan to incorporate business practices consistent with the sustainable use and management of natural capital, including resources such as clean air, water, land, minerals and forests. We are also interested to hear from companies how they contribute to biodiversity and ecosystem health and consider their broader impact on the communities in which they operate.¹⁰

For those companies that are resource-intensive, operational continuity will depend on sustaining the ecosystems that provide them with their underlying resources.¹¹ For example, beverage companies need a reliable supply of fresh water; consumer goods companies need cardboard boxes derived from trees to ship their goods; food companies rely on predictable crop yields and fertile arable land to generate their products; and biopharma companies rely on ecosystems to derive novel sources of medicines.

Regulatory and Reputational Risks

Until recently, the cost of natural capital had not been priced into the cost of doing business in any meaningful way.¹² We expect this to change over time as government policies increasingly look to address the negative consequences for society from natural capital depletion. Although policy actions will be uneven globally, we anticipate measures that will encourage more efficient use of resources, such as a price or tax on the externalities, from which many companies currently benefit.¹³ Companies' other stakeholders are also increasingly taking into consideration the sustainability and impacts of the companies with which they engage, particularly as consumers and employees. These trends have the potential over time to significantly impact the economic viability of some companies, especially those that do not have resilient business models.

Opportunities

The challenge of producing more goods with fewer inputs—e.g., land, water, raw materials—can also provide opportunities for companies including: reduced input costs, the benefits of innovation, research and development (R&D), and an enhanced ability to partner with the companies in their supply chains, as well as consumers. For example, a World Economic Forum (WEF) study noted that by transforming old clothes into new ones, the fashion industry could simultaneously reduce its impacts on biodiversity while capitalizing on an opportunity worth an estimated US\$560 billion.¹⁴

We also believe that companies have an opportunity to benefit from improved practices across an industry. Active participation in industry initiatives can help companies contribute to sector-level supply chain improvements, such as storage, logistics and traceability programs. Initiatives can also advance practices through the establishment of meaningful policies and commitments, such as those addressing deforestation and human rights, including conduct relating to indigenous peoples.

Companies with complex supply chains may face additional reputational and operational risks, which they might mitigate by taking steps to see these efforts carried through to their supply chains by ensuring that their sourcing processes support sustainable business practices by their suppliers. The opportunity to engage with and support improvements in suppliers can contribute to supply chain resilience. It is helpful to investors when companies disclose how they identify and protect against adverse impacts across supply chains, and how they engage with their suppliers and work with them as they remediate any shortfalls.

An important component of managing natural capital risk is an understanding of the linkages between natural capital and the communities in which companies operate, including through their supply chains.¹⁵ Key community stakeholders may include indigenous and traditional peoples whose livelihoods, languages, and traditions are often dependent on that land and its species.^{16,17} As a long-term shareholder on behalf of clients, we look to companies to establish strong working relationships with key community stakeholders, whose support is necessary for their long-term financial success.

Through this long-term lens, BIS believes it is important for companies to obtain the free, prior, and informed consent (FPIC) of indigenous peoples for initiatives that affect their ecosystems and their rights. The reputational risks from not doing so tend to impact companies over time. Similarly, companies can work with the communities in which they operate to protect cultural heritage sites and provide access to resources and/or compensation in the event of displacement or destruction. It helps investors' understanding, and that of other stakeholders, when companies disclose the communication and dispute resolution mechanisms they have in place to navigate these challenging topics.

Reporting on natural capital impacts and dependencies

Company disclosures help investors assess performance in relation to the many factors that contribute to value creation, including how relevant risks are identified, assessed, managed and mitigated, and how opportunities are harnessed. This information supports informed investment decision-making, including in relation to stewardship. As noted above, it has historically been difficult to assess the value of natural capital to companies as reporting methodologies were nascent. This gap is being addressed, most notably by the Taskforce on Nature-related Financial Disclosures (TNFD) (see callout), along with other private sector initiatives.

BIS looks to companies to provide disclosure to help shareholders and other stakeholders assess their approach to managing natural capital risks and opportunities that are material to their business models. We find it helpful to our understanding when these disclosures include a discussion of these risks and opportunities in the context of a company's governance, strategy, risk management and metrics and targets.¹⁸ It is also helpful to hear from companies how they manage natural capital dependencies and impacts in the context of the communities in which they operate.¹⁹

We note that the Sustainability Accounting Standards Board's (SASB's) industry-specific guidance (as identified in its materiality map) can be beneficial in helping companies identify key performance indicators (KPIs) across various dimensions of sustainability that are considered to be financially material and decision-useful within their industry.²⁰ Some industry groups have developed their own disclosure standards which encompass natural capital risks.²¹ It supports our assessment as a long-term shareholders when companies set targets aimed at conserving the natural capital that they have identified as financially material within their industry. For example, this may include targets related to fresh water conservation, emissions reduction, recycling, reforestation or the adoption of deforestation-free supply chains, species protection, and habitat rehabilitation and conservation, among others. We believe it will help investors' understanding and make reporting for companies' more effective when the TNFD has standardized industry specific targets for natural capital risks and opportunities.

Based on our review of company disclosures and actions, BIS may engage with executive management and board members to hear directly from them how they are ensuring that their company's business model is resilient and well positioned to deliver long-term financial returns. We also may engage if we have specific concerns that are not addressed in a company's disclosures. We ask questions to build our understanding and provide feedback, particularly if we have concerns about a company's approach. As one of many, and typically a minority shareholder, BlackRock is not in a position to dictate a company's strategy or its implementation.

We may withhold support for management proposals if we are concerned that natural capital-related risks and opportunities are not being effectively managed, overseen, or disclosed. Most often we signal concern by not supporting the re-election of board directors we consider to be most responsible for an issue, although we may support shareholder proposals where they are relevant to a material gap in a company's approach.

In June 2021, the Taskforce on Nature-related Financial Disclosures (TNFD) was formally launched to address the lack of consistent information available to financial institutions on how nature impacts a company's immediate financial performance, or the longer-term financial risks that may arise from how a company depends on and impacts nature.²² Backed by the G7 Finance Ministers and G20 Sustainable Finance Roadmap, the TNFD aims to develop and deliver a risk management and disclosure framework to help companies to report, and act on, natural capital risks.²³ BlackRock is contributing to the TNFD along with several other natural capital initiatives such as the Principles for Responsible Investment (PRI) Sustainable Commodities Working Group, Global Canopy Aligned Accountability project, and the World Economic Forum (WEF) Biodiversity Finance Working Group.

When we engage with companies on their approach to managing material natural capital dependencies or impacts, we look to build on their disclosures to enhance our understanding of the following:

- Identification and disclosure of their natural capital related risks and opportunities²⁴
- Management and the board's specific roles in overseeing and mitigating natural capital risks and harnessing opportunities, including explaining how management takes natural capital into consideration in strategy setting, risk management processes, and other key business decisions
- Whether and how the company sets short, medium-and long-term targets for natural capital factors, such as water conservation, reforestation, pollution control, etc., particularly in terms of improving efficiency, reducing a company's negative impacts, and an explanation of how progress is monitored
- Whether the company has corporate policies or codes of conduct addressing natural capital practices, including whistleblower protections and mechanisms to oversee compliance and remedy breaches
- The company's supply chain due diligence processes, including how the company is working with stakeholders or participating in sector-relevant initiatives, and how the company identifies and protects against adverse impacts across its supply chains
- Any material investments in research and development to enhance operations and/ or develop products to reduce natural capital dependencies and impacts
- Any material contributions to programs that protect natural capital and / or participation, as appropriate, in industry collaborations aligned with addressing pervasive issues
- Efforts to engage with local communities, and in particular, to safeguard the rights of any indigenous peoples directly impacted by company operations
- Any independent third-party assessments of the data and/or approach taken to manage natural capital-related risks including the benchmarking of policies, practices, and performance

BIS' three natural capital focus areas

While recognizing that natural capital is a complex issue and ecosystems are interconnected, for the purposes of our work we focus on three key areas - biodiversity, deforestation and water - which we believe can impact the long-term financial returns of certain companies.

Biodiversity preservation

Biodiversity refers to the various forms of life on earth, including, but not limited to, plants and animals.²⁵ Ecosystem services from biodiversity are worth an estimated \$150 trillion annually, according to a recent study.²⁶ The economy and society remain highly dependent on ecosystems and the services that they provide, such as fresh water, pollination, soil fertility, carbon storage, food and medicine provisions, among others.^{27, 28, 29}

While clearly a societal issue, it is also very much a business one.^{30, 31} As such, BIS looks to companies with material biodiversity impacts and dependencies to demonstrate that they have a sound management approach that supports long-term sustainable value creation.

Our approach to engagement on biodiversity

In addition to understanding material dependencies or impacts on natural capital from disclosures and engagement with companies, for those that have material biodiversity exposure we seek to understand:

- How the company assess its exposure to biodiversity-related risks and opportunities
- Policies the company has put in place around biodiversity preservation and enforcement mechanisms in the event of a breach
- Any metrics and targets the company has put in place to help preserve biodiversity, such as:
 - Habitat and biodiversity restoration and preservation practices
 - Responsible land usage and management practices, including efforts to limit habitat destruction and land occupancy, where possible
 - Use of sustainably sourced plants, seeds and products to preserve land and variety
- Monitoring undertaken for threatened and endangered species within operational areas and completion of wildlife presence/absence surveys
- For agriculture and forestry businesses, initiatives to improve land use in order to ensure sustained yields and the ability to continue to meet market demand while also optimizing resource efficiency and preserving land for natural ecosystems
- Any initiatives to encourage innovation in practices to help maintain surrounding natural habitats, limit waste and GHG emissions, and protect against the adverse impacts of climate change
- Efforts undertaken to limit the introduction of invasive species
- Efforts undertaken to purchase sustainably sourced raw materials and components as inputs into their company products
- Soil and water contamination controls, including initiatives to improve practices that minimize the use of chemical inputs like pesticides, fertilizers, and wide-spectrum antibiotics in order to protect biodiversity, reduce the degradation of natural resources (including water pollution), and reduce the spread of antibiotic resistance through food chains

The Agriculture Sector

Society is dependent on the agriculture sector to ensure the security, quantity, quality, and safety of food. In many economies, the agricultural sector is credited with driving economic growth and sustaining communities. Societal expectations of the sector to produce on a sustainable basis are likely to increase as more, and more efficient, agricultural production is needed to provide for a growing global population and to improve socio-economic conditions.

Biodiversity loss and deforestation are key risks to the future financial stability of the agricultural sector. Financial and reputational risks are particularly material in the palm oil, soy, beef, leather, timber, and pulp and paper industries which comprise the six largest drivers of commodity-related deforestation.³² Unsustainable business practices can lead to environmental degradation, supply-chain disruptions, fluctuating prices, smaller crop yields from overused land and loss of pollinators, among other risks, undermining the sector's ability to deliver long-term profits. We have seen these risks play out in the Amazon Basin and across regions in South East Asia and Africa, especially with regard to the impact on indigenous peoples' rights, biodiversity loss, and climate and air quality concerns.^{33, 34}

As a result, shareholders increasingly look to companies with agribusiness interests – either through direct operations or significant supply chain connectivity -- to demonstrate, through their actions and disclosures, that their business practices are sustainable.³⁵ Depending on a company's business model, this might include, among other things, responsible land use and management practices, the prevention of illegal logging, protecting biodiversity, and better management of GHG emissions, waste and water use.

Deforestation risk management

Commodity-driven deforestation and other types of unsustainable land use are key drivers of the loss of global forests which in turn plays a significant role in accelerating climate change and biodiversity loss.³⁶ Agriculture, forestry and other land uses are the second-largest source of global GHG emissions, behind only the emissions produced by the energy sector.³⁷ On the other hand, carbon storage, through carbon sinks, is one of the most critical ecosystem services forests provide.^{38, 39}

Nature Based Solutions – An Opportunity for Preservation

Achieving net zero emissions requires balancing the emissions produced with the emissions removed from the atmosphere. In addition to the deployment of renewables and other carbon neutral and negative technologies, companies might also accelerate carbon removal and avoidance opportunities through the use of nature-based solutions, including biodiversity preservation, reforestation, and carbon sequestering land use practices.

Nature-based climate solutions are commonly defined as conservation, restoration, and improved land management practices that increase carbon storage and/or avoid greenhouse gas emissions across global forests, wetlands, grasslands, and agricultural lands.

We are interested to learn more about and support companies' decisions to invest in nature-based climate solutions above and beyond their operational emissions reduction goals. When doing so, companies can aid investors' understanding by disclosing how these projects are evaluated and assessed for their permanence and additionality, as well as for leakage and double counting, in order to assure investors and other stakeholders that these investments are achieving their stated objectives.⁴⁰

Our approach to engagement on deforestation

In addition to understanding material dependencies or impacts on natural capital from disclosures and engagement with companies, for those that have material deforestation exposure we seek to understand:

- The breakdown of each site where the company is growing or sourcing agricultural commodities as a proportion of its total production/sourcing (this allows investors to understand a company's exposure to high-risk areas)
- Whether the company has set and implemented strong deforestation commitments and policies, covering deforestation, conversion, and any human rights issues implicated
- Any targets the company has set to ensure that its products and operations are deforestation free
- Any existing efforts to halt and reverse past forest loss and land degradation such as around site reclamation, Greenfields, reforestation etc.
- Initiatives and targets relating to protecting and regenerating the habitats which support the biodiversity on which companies depend
- Initiatives, policies, certifications or codes of conduct that support committing to first and second tier deforestation and conversion-free supply chains
- Whether the company monitors its own and its suppliers commitments towards free prior and informed consent (FPIC)
- Systems to trace and label products to assure customers and end consumers of the sustainability of the practices associated with the product

Fresh water and oceans protection

Fresh water

Virtually every economic sector— and particularly agriculture, pharmaceuticals, power generation, manufacturing, technology, apparel, tourism, food and beverage production — is heavily dependent on fresh water.⁴¹ While nearly 70% of the globe is covered by water, only 2.5% of it is fresh water and less than 1% of that water is accessible and available for use.⁴² For companies for whom water is essential to their business operations, their future access may depend on their ability to demonstrate that they use this scarce natural resource efficiently and with minimal waste.⁴³

Oceans

In addition to fresh water, oceans and seas cover over two-thirds of the earth's surface and provide food and minerals, generate oxygen, absorb greenhouse gases, determine weather patterns, and facilitate the international shipping trade.⁴⁴ Oceans are also threatened by pollution and run off, plastics pollution, overfishing, and climate change. The global ocean is estimated to be a \$24 trillion asset, and goods and services from coastal and marine environments amount to about \$2.5 trillion each year.⁴⁵

Our approach to engagement on fresh water and oceans

In addition to understanding material dependencies or impacts on natural capital from disclosures and engagement with companies, for those that have material water risk exposure we seek to understand:

- Company water, waste, and materials policy, including their approach to identifying and managing water scarcity and pollution-related risks, as well as responsible waste disposal and recycling efforts as they relate to fresh water and oceans
- Water stewardship strategy, with a focus on facilitating sustainable water security for their business and for the communities in which they operate. This may include:
 - Ocean ecosystem protection including pollution monitoring and prevention, and species and ecosystem monitoring, protection and rehabilitation
 - Scenario analysis on the frequency of water-related risks such as droughts, extreme precipitation and flooding, etc. This analysis should include consideration of the frequency of these events over the short, mid, and long term in the company's area of operation, the estimated cost implied, and a company's planned response. Similar analysis is encouraged for areas where company is planning on capacity expansion
 - The number of days or period of time operations can continue in drought season where fresh water supply is limited. This is a direct reflection of the operations' resiliency
- Short, medium, and long-term water use reduction and/or water recycling targets
- Policies regarding timely reporting of any unplanned discharges and accompanying remediation efforts
- Efforts the company is taking to reduce overall fresh water withdrawals in their direct operations as well as through their value chains, especially in areas under stress or facing high demand, including:
 - Frequency and magnitude of a company's fresh water withdrawals and consumption vs total water consumption
 - Water recycling and wastewater treatment efforts, including how much of the company's wastewater is released back into the environment untreated
 - Deployment of water-efficiency solutions, fresh water conservation targets, and / or usage of recycled water
 - The frequency and process around measuring and monitoring a company's discharges
- The development of any water-efficiency solutions, including:
 - infrastructure development
 - responsible agricultural and sustainability practices
 - technology deployment to conserve water and eliminate discharge of plastics or waste
 - usage of recycled municipal water waste for industrial usage

Plastics Pollution

Over 300 million tons of plastic are produced every year, of which about 8 million tons end up in oceans, endangering marine species.⁴⁶ At the same time, plastic waste particles called microplastics and plastic microfibers have been found in municipal drinking water systems and drifting through the air.⁴⁷ Plastic pollution presents risks to companies and consumers as it threatens food safety and quality, human health, coastal tourism, and contributes to climate change.⁴⁸ Engaging on plastics pollution is an increasingly important topic for BIS. Through our engagement, we seek to understand:

- How companies are accelerating efforts related to recycling and reuse of plastic products in consideration of a circular economy; which may include efforts around improved infrastructure support in challenged areas
- Efforts and investments around research and innovation to develop new products such as biodegradable plastics to replace single-use plastics⁴⁹
- Targets established to limit runoff and waste and to support efforts to clean up existing plastics pollution

Conclusion

Investors' expectations of companies in relation to how they manage their dependencies and impacts on natural capital are increasing. We believe that companies that disclose detailed information on their approach to managing material natural capital-related business risks and opportunities are more likely to benefit from shareholder support and be in a better position to deliver long-term, sustainable financial performance. BIS will continue to engage with companies to better understand their approach to, and oversight of, the natural capital that underpins their company strategy. In addition, we may not support the re-election of responsible board directors when companies have not effectively managed, overseen or disclosed natural capital-related risks and opportunities. We may also support relevant shareholder proposals addressing material natural capital risks if we believe a company could better manage such risks or report on management's approach to addressing them. Due to the importance of natural capital to the global economy and companies individually, investors are likely to continue to focus on companies' efforts to address these risks and opportunities and encourage continual improvements in approach.

Endnotes

1. Namely, the value provided to people and the economy of the stock of resources nature offers.
2. University of Cambridge, "[Dasgupta Review: Nature's value must be at the heart of economics](#)," February 2021.
3. See e.g. "[Why is Biodiversity Important](#)" in Natural Capital Coalition's Integrating Biodiversity into Natural Capital Assessments, and [Biodiversity and the 2030 Agenda for Sustainable Development](#).
4. See e.g. "[Definition of nature-related risks and opportunities](#)" in TNFD Nature in Scope, pages 10-11.
5. According to the International Integrated Reporting Council (IIRC), [natural capital](#) refers to "all renewable and non-renewable environmental stocks that provide goods and services that support the current and future prosperity of an organization." Natural capital includes air, water, land, forests and minerals, and biodiversity and ecosystem health.
6. One in five companies globally face significant operational risks as a result of failing ecosystems. Swiss Re Group. "[Swiss Re Institute Biodiversity and Ecosystem Index](#)," 23 September 2020.
7. World Economic Forum, "[Nature Risk Rising: Why the Crisis Engulfing Nature Matters For Business and the Economy](#)", January 2020.
8. Swiss Re Group. "[Swiss Re Institute Biodiversity and Ecosystem Index](#)," 23 September 2020.
9. Currently there is a wide range of language to describe human impacts on the environment. For example, the Sustainable Accounting Standards Board (SASB) refers to these topics as "ecological impacts."
10. Our [Global Principles](#) underscore our belief that in order to deliver value for shareholders, companies should also consider their other key stakeholders. As described in our commentary on [Our approach to engaging companies on their human rights impacts](#), we ask companies to implement processes to identify, manage and prevent adverse human rights impacts that are material to their business, and provide robust disclosures on these practices.
11. The Intergovernmental Panel on Climate Change. "[Special Report Climate Change & Land](#)," 2019
12. University of Cambridge, "[Dasgupta Review: Nature's value must be at the heart of economics](#)," February 2021.
13. Like other readily available resources, overuse is exacerbated by the absence of clear financial metrics to appropriately value and protect natural capital, coupled with a historic economic focus on short-term gains rather than a broader focus on long-term sustainability. In addition, the current absence of adequate rules and regulations focused on protecting and strengthening natural capital globally, plays an important role.
14. World Economic Forum. "[Save the Axolotl: Dangers of Accelerated Biodiversity loss](#)," 2020.
15. Please refer to BlackRock Investment Stewardship's (BIS) Approach to Engagement on Human Capital Management and our Approach to Engagement on Human Rights.
16. United Nations Environment Programme. "[Cultural and Spiritual Values of Biodiversity](#)," 1999.
17. Biodiversity is also an integral part of religious, cultural, and national identities throughout society, and provide sources of recreation, knowledge, and inspiration. See Gomez-Baggethun, E., and Martin-Lopez, B. "[The socio-economic costs of biodiversity loss](#)," *Lychnos*. December 2010.
18. This is the framework set out by the Taskforce on Climate-related Disclosure (TCFD). While focused on climate-risk reporting, in our view, its four pillars - governance, strategy, risk management, and metrics and targets - are conceptually as applicable to all corporate reporting relating to environmental and social (E&S) risks and opportunities. We also believe that TCFD-aligned reporting can usefully be supplemented by industry-specific metrics such as those identified by the Sustainability Accounting Standards Board (SASB) or other recognized standard setters. SASB, "[SASB Materiality Map](#),"
19. Certainly, non-financial, business relevant ESG considerations are an integral part of a company's ability to generate long-term value. Our focus, as long-term investors, is on reporting that explains enterprise value creation. We also recognize that what investors consider to be material ESG issues today will change over time. This concept of "dynamic materiality" recognizes the need for companies and best in class operators to regularly evaluate risks and opportunities within their strategies, while considering shareholder interests alongside stakeholder impacts. We anticipate that as risk factors change, companies will continue to evolve reporting to reflect these realities. However, as we seek to streamline global reporting on these issues, we believe financial materiality provides a path forward for companies to quantify natural capital dependencies in the short-term, while also assessing tangible long-term results on the business in the context of a resource-constrained world. <https://www.blackrock.com/corporate/literature/publication/our-response-to-the-technical-scope-of-the-taskforce-on-nature-related-financial-disclosures-consultation.pdf>
20. SASB Materiality Map available at <https://www.sasb.org/standards/materiality-finder/>
21. We recognize that some companies may report using different standards, which may be required by regulation, or one of a number of private standards. In such cases, we ask that companies highlight the metrics that are industry- or company-specific. [BIS Global Principles](#).
22. Taskforce on Nature-related Financial Disclosures (TNFD). <https://tnfd.global/>
23. Better information will allow financial institutions and companies to incorporate nature-related risks and opportunities into their strategic planning, risk management and asset allocation decisions. <https://tnfd.global/about/#who>
24. SASB is beneficial in helping companies identify key performance indicators (KPIs) across various dimensions of sustainability that are considered to be financially material and decision-useful within their industry. <https://www.blackrock.com/corporate/literature/fact-sheet/blk-responsible-investment-eng-principles-global.pdf>.
24. The [Convention for Biological Diversity](#) (CBD) defines biodiversity as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems.
25. Boston Consulting Group. "[The Biodiversity Crisis Is a Business Crisis](#)," 02 March 2021.
26. Forests and ecosystems, such as mangroves, marshes, and coral reefs provide critical habitats and are crucial sinks necessary for achieving the carbon reductions needed to counteract the impacts of global warming. Shaw, J. "[Why is biodiversity important?](#)" *Conservation International*. 15 November 2018.
27. For example, in many cases, natural molecules for medical treatments are so complex that scientists do not yet have the technology to chemically synthesize them, so they must harvest and store plants and seeds. The World Economic Forum (WEF) reports that 50% of modern drugs are developed from natural products that are currently threatened by loss of biodiversity. This has the potential to result in a loss of new sources of medicines, treatments and vaccines. See: "[The Global Risks Report 2020](#)"
28. Shaw, J. "[Why is biodiversity important?](#)" *Conservation International*. 15 November 2018.

Endnotes (cont'd)

29. The Global Futures Report 2020 determined that the impacts to major ecosystem services under a "business as usual" scenario would lead to a drop of 0.67% in annual global GDP by 2050. From 2011 to 2050, the total cumulative loss would be US\$ 9.87 trillion. This represents a 3% discount rate. See [WWF's "Global Futures: Assessing the Global Economic Impacts of Environmental Change to Support Policy-Making"](#) – summary report for government and business decision-makers. February 2020.
30. In its annual Global Risks Report in 2020, the WEF found that environmental risks dominated perceived business threats and that biodiversity loss was considered among the five most impactful and most likely business risks in the next decade. Concerns range from the potential collapse of food and health systems, to the disruption of entire supply chains. WEF reports that the destruction of nature will inevitably impact bottom lines—for example, through reduced fish stocks disrupting commodity supply chains and economic losses from disasters such as flooding. The study notes that the extractives, construction, energy, fashion and textile sectors are among those especially vulnerable to ecological destruction. See: ["The Global Risks Report 2020"](#)
31. [Forest 500 - 2021 Report](#)
32. The Amazon Basin is widely seen as the lungs of the world and a critical part of global efforts to address climate change. As an area rich in natural resources, it has attracted many operators, both those with high environmental standards and those without, including some who act outside the law. As a result, we believe companies with business interests in the region – either through direct operations or significant supply chain connectivity – could face increased regulatory, operational or reputational risk.
33. BIS has ongoing, multi-year engagements with palm oil companies in the Asia ex-Japan markets to further our understanding and encourage them to better address the E&S risks associated with the palm oil industry that can impact the creation of durable, long-term value. For more information, please see our commentary on [our approach to engagement with the palm oil industry](#).
34. UN PRI. ["Sustainable Agriculture."](#) August 2018.
35. In a business-as-usual scenario, with deforestation continuing at present rates, global human welfare losses have been conservatively estimated at between \$2 trillion and \$4.5 trillion of natural capital lost each year.
36. Ceres' ["Investor Guide to Deforestation and Climate Change"](#) to which BlackRock Investment Stewardship (BIS) participated as an investor reviewer of the report.
37. WWF, GTAP, and Natural Capital Project. ["Global Futures: Assessing the Global Economic Impacts of Environmental Change to Support Policy-Making."](#) February 2020.
38. A recent study found that doubling nature and water conservation efforts through avoided deforestation and natural forest regrowth by 2030 could reduce atmospheric CO₂ in a range equal to 4 to 12% of the annual CO₂ emissions reductions needed to limit global warming to less than 2°C. Simply put, the world will not reach the goals of the Paris Agreement, let alone the aspiration to reach net zero emissions by 2050, without curtailing deforestation and accelerating protection and restoration efforts.
39. For more information as well as our approach to carbon offsets, please see our commentary on [Climate Risk and the Global Energy Transition](#).
40. See previous endnote.
41. National Geographic. ["Freshwater Crisis"](#)
42. In the next three decades, estimates predict a 40% to 50% increase in water demand for the global food system, a 50% to 70% increase for the municipal and industrial sector, and an 85% increase for the energy sector. World Business Council for Sustainable Development (WBCSD). <https://www.wbcsd.org/Programs/Food-and-Nature/Water/Valuing-Water>
43. National Oceanic and Atmospheric Administration. ["Understanding Ocean Acidification."](#) U.S. Department of Commerce.
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