

The nature- positive ecosystem map in *action*

Learn more about our commitment to nature positive and discover our on-the-ground approach to navigating the resources of the nature-positive ecosystem.

A full-page background image of a man hiking on a dirt trail through a dense forest. The man is wearing a green jacket, light-colored pants, and a backpack. Sunlight filters through the tall trees, creating a misty atmosphere. The forest floor is covered in green moss and ferns.

Introduction

For Manulife Investment Management's timberland and agriculture businesses, nature is our business.

We manage it to preserve its ability to provide us with valuable services—services that provide financial returns for our investors and benefit society. The opportunity to be in nature is why many of our employees do what they do: Many of us are foresters or farmers, ecologists or earth scientists, and a sizable proportion of our most senior investment professionals started their careers in those roles. It's not uncommon for us to manage smaller farms or forests of our own, outside our formal job responsibilities, or to fish, hunt, trail blaze, climb, or volunteer with conservation organizations. We love what we do, and proximity to nature is one of the biggest reasons why.

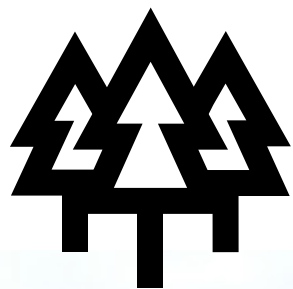
Protecting nature is an essential challenge when managing real assets, and nature is the foundational real asset on which all others—including forests and farmland—depend. As real asset managers of forests and farmland, we're no strangers to nature and its stewardship. Being close to nature provides the sector with greater visibility into its impact and dependencies on nature in ways that are far harder for companies whose activities are further removed from the tangible natural world. Since 2005, we've had operational policies on nature-facing themes ranging from biodiversity to biotechnology, water usage to waste management, at-risk species to air quality, and riparian zones to recreational use.

Since our founding as Hancock Natural Resource Group in 1985, we've lived by the principle that good stewardship is good business. Stewardship of the land, water, ecosystems, people, communities—our clients' capital—is the foundation for sustainability, and these are protected for future generations only if we take good care of them today. Throughout our sustainability journey, we've engaged with many third-party sustainability certifications, and been an early adopter of many of them. These certification schemes provide rigorous management guidelines to support land managers in promoting biodiversity, protecting threatened and endangered species, and increasing overall ecosystem health, while seeking to continue generating the requisite returns. Additionally, we partner at both the local and corporate levels with land trusts, state environmental programs, and international nongovernmental organizations to protect high conservation-value land.



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A timeline



2002

We certified 100% of our timberland holdings throughout North America to the Sustainable Forestry Initiative standard.¹

2004

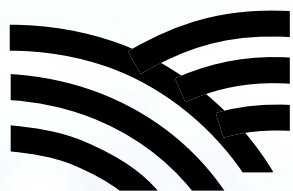
Two years later, our Hancock Victorian Plantations (HVP) investment achieved Forest Stewardship Council (FSC) certification for its responsible management of forest operations.²

2007

HVP was certified under the Responsible Wood standard (Programme for the Endorsement of Forest Certification) and held both Australian Forestry Standard and FSC certification.³

2011

We formally established our sensitive lands program for preserving unique and sensitive lands; as of 2021, we've preserved over 470,000 acres.⁴



2014

Recognizing a dearth of global sustainable agriculture certifications similar to those for forestry, we released agricultural stewardship principles to guide development of our sustainable agriculture program (SAP).

2015–2018

Over the subsequent four years, we spearheaded a sectorwide effort to turn the SAP into a global sustainable agriculture standard.

2019

In 2019, the Leading Harvest Farmland Management Standard was launched. Later in 2019, we completed the first third-party audit to the Leading Harvest Farmland Management Standard for our entire direct-operate U.S. farming platform—over 69,000 acres of almonds, pistachios,

apples, and cranberries. In 2021, we completed the third-party audit of our entire leased U.S. farming platform to the standard, adding over 213,000 acres of row crop farmland to our certified portfolio and achieving Leading Harvest certification on 100% of our U.S. agriculture platform.⁵

Source: Manulife Investment Management.

¹ As of December 31, 2002. ² As of December 31, 2004. ³ As of December 31, 2007. ⁴ Sensitive lands are defined as lands with critical habitat for sensitive or endangered species, or lands with high scenic, historic, cultural, or recreational value. ⁵ Certification as of May 17, 2021, by Leading Harvest and is based on an annual assessment of the conformation to the Farmland Management Standard. Most current data shown. Please see <https://www.leadingharvest.org>



We've worked hard to have a positive impact on nature, yet we know that good intentions and isolated actions won't reverse nature's decline. Our company, and the global economy, needs a systematic way of understanding how we affect—and depend on—nature, how nature affects us, and how we can be more nature positive.

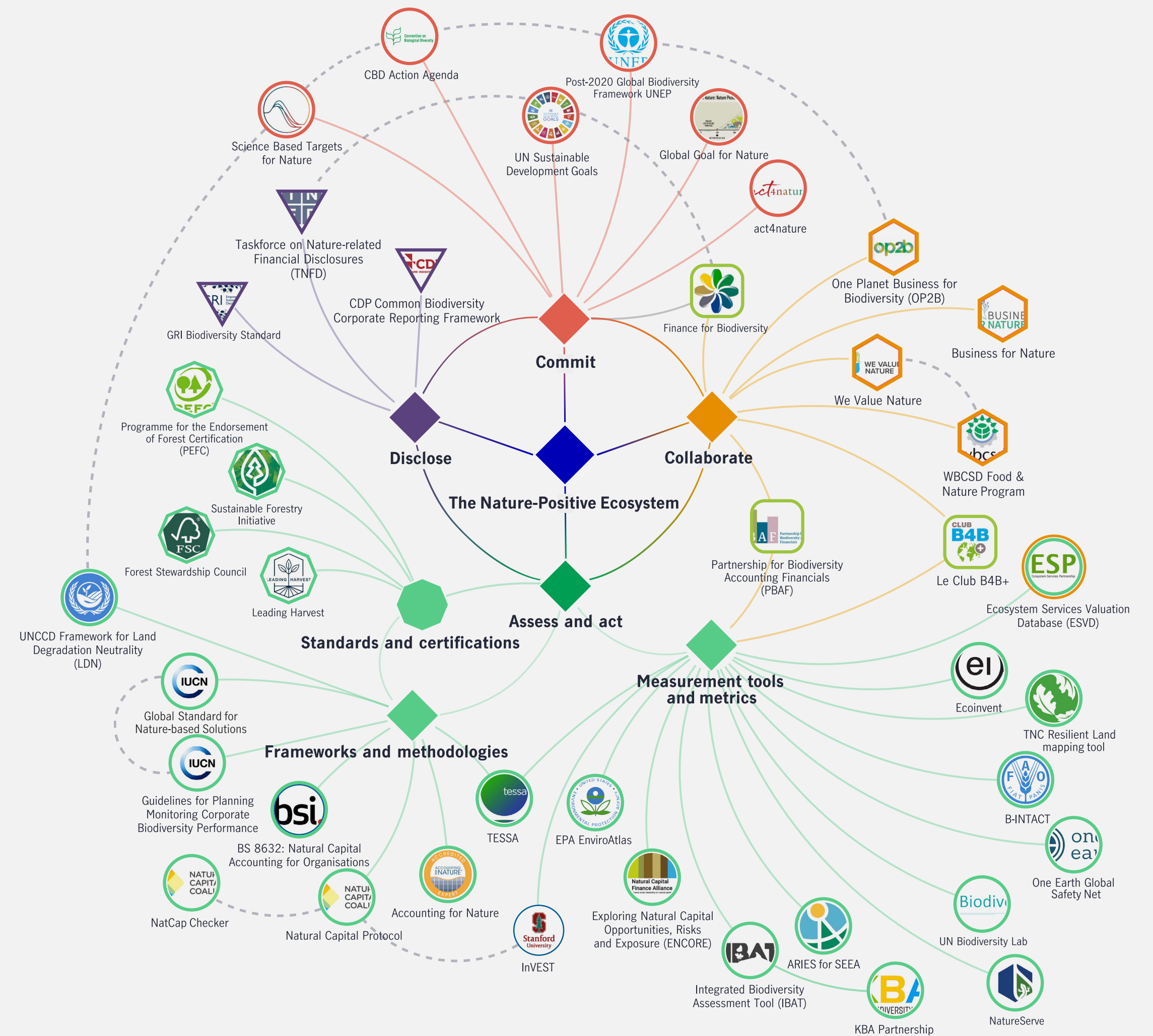
This is why we created the nature-positive ecosystem map: Understanding the landscape is the first step in organizing our existing engagements and actions into a nature-positive agenda. The following sections describe our approach to each of the steps in the nature-positive ecosystem, as well as lessons learned while navigating the path to nature positive.

“Our company, and the global economy, needs a systematic way of understanding how we affect—and depend on—nature, how nature affects us, and how we can be more nature positive.”

Our approach to the nature-positive ecosystem

We start by identifying the most relevant components of the map for our business. Being selective is essential for meaningful progress, so our version of the ecosystem map is indicative rather than exhaustive and continues to evolve.

- ◆ **Commit**
- ◆ **Collaborate**
- ◆ **Assess and act**
- ◆ **Disclose**



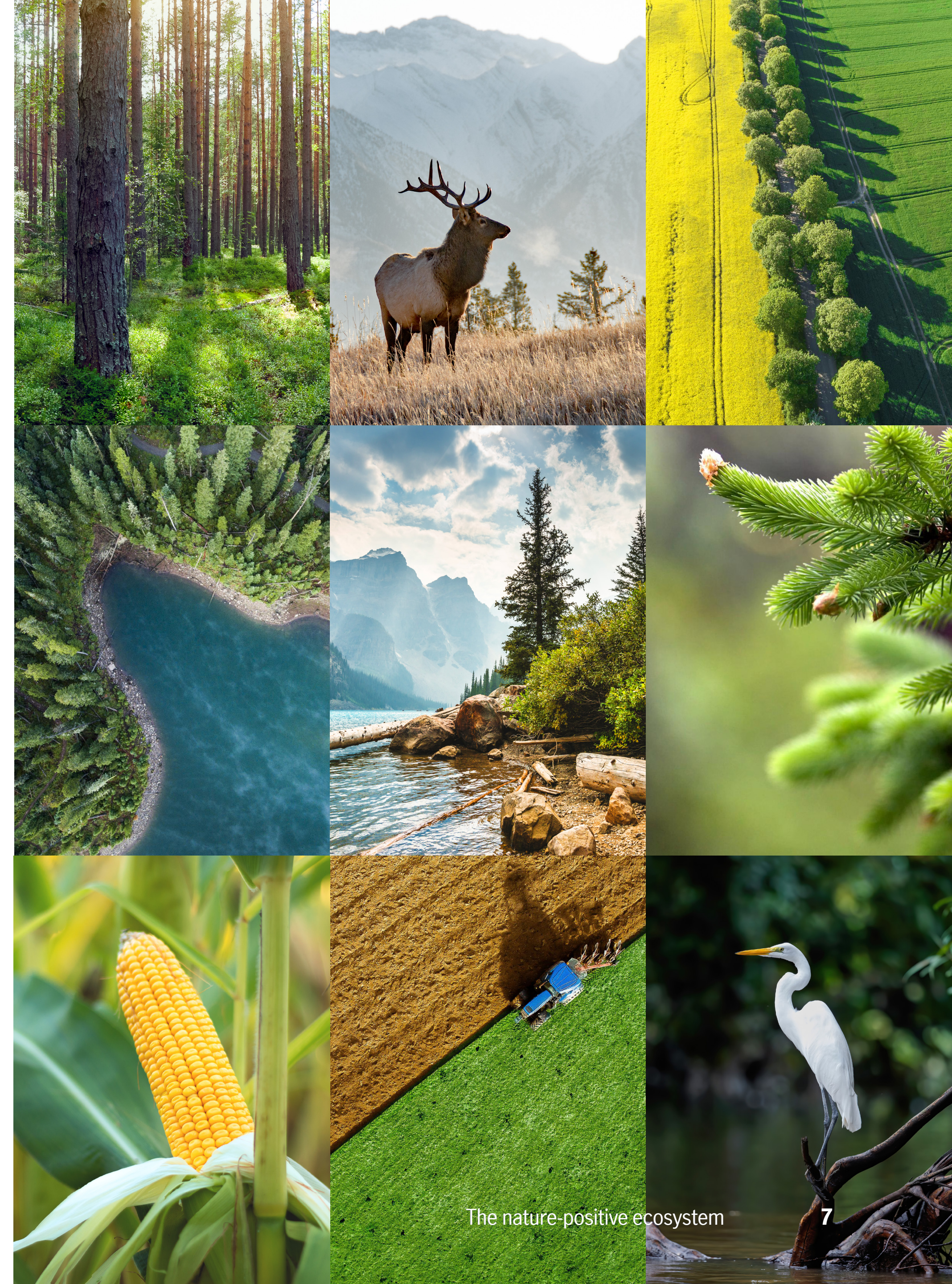
Source: Manulife Investment Management, Delphi Group, 2022. For illustrative purposes only. The logos referenced above are registered trademarks of the respective firms represented.

1 Commit

Sustainable Development Goals

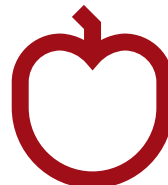





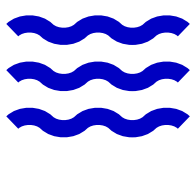
While certifications are industry-specific frameworks, the UN's Sustainable Development Goals (SDGs) are global goals that are relevant to every person and institution. Any conversation about business and nature should be anchored to the SDGs, and that's where we begin ours. We understand our interactions with nature—what, and how, we produce—in the context of the SDGs, and are committed to achieving them.

Yet as important as the SDGs are, they weren't written for the business community, nor do they provide a specific blueprint for implementation. In the 2020s, it's table stakes for companies to be able to illustrate how they contribute to the SDGs, but in order to meaningfully monitor their progress, it's important to first identify their most relevant, industry-specific commitment.

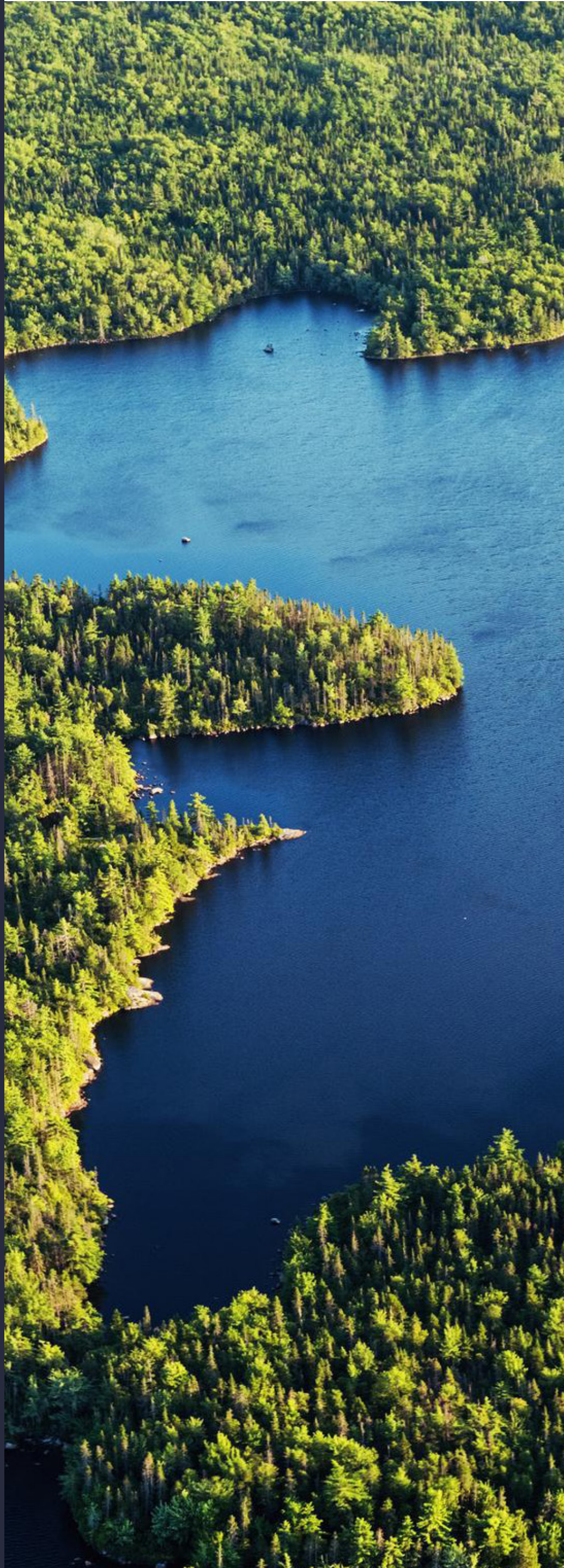


At Manulife Investment Management, we're committed to sustainability and responsible investing

Managing natural resources allows us to focus on areas where meeting environmental and/or social needs can offer commercial growth opportunities.

Products		Process					
	Sustainable food We produce healthy, nutritious foods such as nuts, fruit, and vegetables consistent with planetary health		Climate stability <ul style="list-style-type: none">• Create carbon sequestration opportunities• Invest in renewables and energy efficiency• Sponsor climate change research through MIT		People empowerment <ul style="list-style-type: none">• Create jobs in rural communities• Promote safe and healthy working and living environments• Promote diversity, equality, and inclusion		Community prosperity <ul style="list-style-type: none">• Promote community engagement through volunteering and matching employee donations• Offer recreational land use• Implement vendor code of conduct and human rights focus
	Sustainable fiber We produce sawtimber used in housing and pulpwood used in paper and hygiene products		Ecosystem resiliency <ul style="list-style-type: none">• Protect sensitive lands, biodiversity, and threatened and endangered species• Create conservation easements• Sponsor working lands conservation organizations		Watershed protection <ul style="list-style-type: none">• Implement water use efficiency practices• Use ground storage to capture rain and flood waters• Healthy forests maintain and may improve water quality		

Source: Manulife Investment Management.



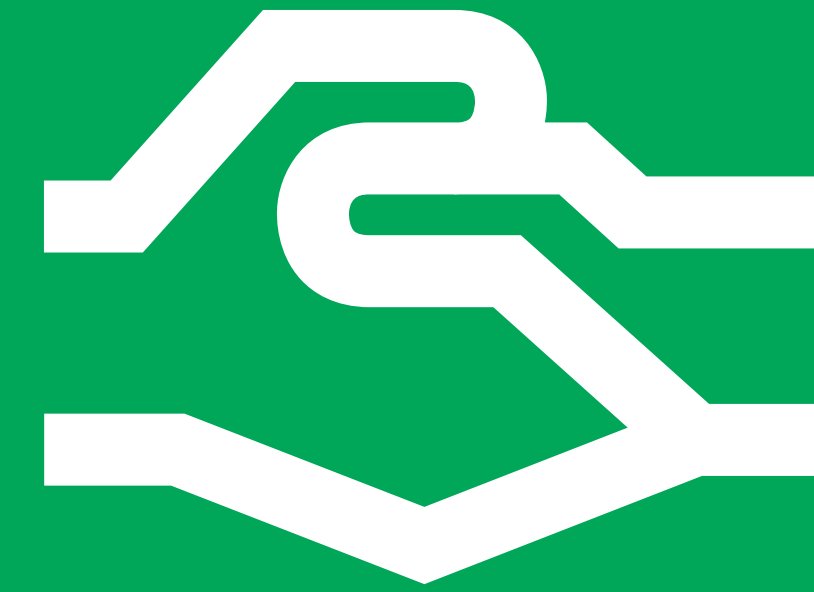
Finance for biodiversity

Further operationalizing these high-level goals and policies, and demonstrating industry-leading outcomes, require more specific frameworks. Manulife Investment Management manages assets across many public and private asset classes, including timberland and agriculture, the most relevant industry-specific commitment for us is the [Finance for Biodiversity Pledge](#), with its 2024 deadline to commit to:

- **Collaboration and knowledge sharing**—We'll collaborate and share knowledge on assessment methodologies, biodiversity-related metrics, targets, and financing approaches for positive impact.
- **Engaging with companies**—We'll incorporate criteria for biodiversity in our environmental, social, and governance policies while engaging with companies to reduce their negative and increase positive impacts on biodiversity.
- **Assessing impact**—We'll assess our financing activities and investments for significant positive and negative impacts on biodiversity and identify their drivers.
- **Setting targets**—We'll set and disclose targets based on the best available science to benefit biodiversity and reduce any negative impact.
- **Reporting publicly**—We'll report annually and be transparent about the significant positive and negative contributions to global biodiversity goals linked to the financing activities and investments in our portfolios.

The pledge is qualitative and flexible, not relying on any one metric, target, or approach to action on biodiversity. Yet these commitments are comprehensive, requiring us to demonstrate industry-specific participation throughout the nature-positive ecosystem. Essentially, the commitment is to consider biodiversity in investment and management decisions, not only within the company, but throughout the value chain; to set targets and report publicly on progress against them; and to work with other investors on this issue collaboratively. We're signatories to the pledge for all these reasons and, as the thinking around quantitative measurement of the business community's contribution toward the health of nature improves, we intend to apply its commitments.

As both an investment and asset manager, we must determine the best way to operationalize these finance industry commitments with our other real asset management commitments. Our membership of the World Business Council for Sustainable Development (WBCSD) [specifies](#) that these commitments be "ambitious, science-informed, short and mid-term environmental goals that contribute to nature/biodiversity recovery by 2050," with milestones to track progress from a baseline of 2020, or whenever adequate data is available. While a commitment to being nature positive as an overall goal might look similar for companies across different sectors, the underlying targets will be unique. For the forest sector, for example, they may build on key performance indicators such as those in the ["Forest Sector SDG Roadmap implementation report."](#) We anticipate that the Science Based Targets for Nature will further specify how to approach goal setting in line with our commitments.



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2 Collaborate

No one company can evaluate and understand every framework, tool, and metric in the context of all of its investment activities. We recognize that full-scale collaboration with every organization represented in the nature-positive ecosystem map isn't possible, but we continue to learn by participating in workshops and webinars that are open to nonmembers. For example, the webinars and other training resources hosted by the [Capitals Coalition's We Value Nature](#) partnership significantly informed our team's choice of understanding and of assessment tools. In short, companies must have partners that can share best practices and lessons learned as they apply developing resources to their nature-positive journey.

WBCSD Food and Nature Program

In keeping with our commitment to the Finance for Biodiversity Pledge, we collaborate extensively with peer companies in our knowledge sharing and approaches to improving the state of nature. As members of the WBCSD, we participate actively in sector-specific programs (Forest Solutions Group, Scaling Positive Agriculture) as well as the cross-cutting [Nature Action](#) program. These programs are precompetitive, focusing on a common interest in sustainability. They allow lessons learned, and early successes, to empower all participants to multiply the resulting benefits to, and from, nature. While industry-specific best practices are critical to becoming nature positive, no one industry can achieve this goal without understanding the challenges faced by other sectors in our deeply interconnected economy. Some programs, such as Nature Action, facilitate cross-sector collaboration to maximize impact.

The WBCSD building blocks



As an example, in 2021, the Nature Action program convened a series of workshops with representatives from 30 leading companies (including Manulife Investment Management) and a further 40 organizations to discuss the role of businesses' contribution to a global nature-positive goal. Those workshops led to the development of a set of foundational building blocks to help businesses understand and work toward becoming nature positive, consistent with the [Natural Capital Protocol](#) and the Science Based Targets Network's initial guidance. Following the workshops, we published a [WBCSD insight piece](#) that offers our initial thinking about what a nature-positive road map for the forest sector might look like.

Collaboration can take many forms; The most important element is not *how* collaboration occurs, but that it *does* occur. When it comes to preserving nature, we need more collaboration than competition. It's nature that needs our protection—not our ideas about how we protect it.

Source: [“What does nature-positive mean for business?”](#) WBCSD, November 9, 2021.

3 Assess

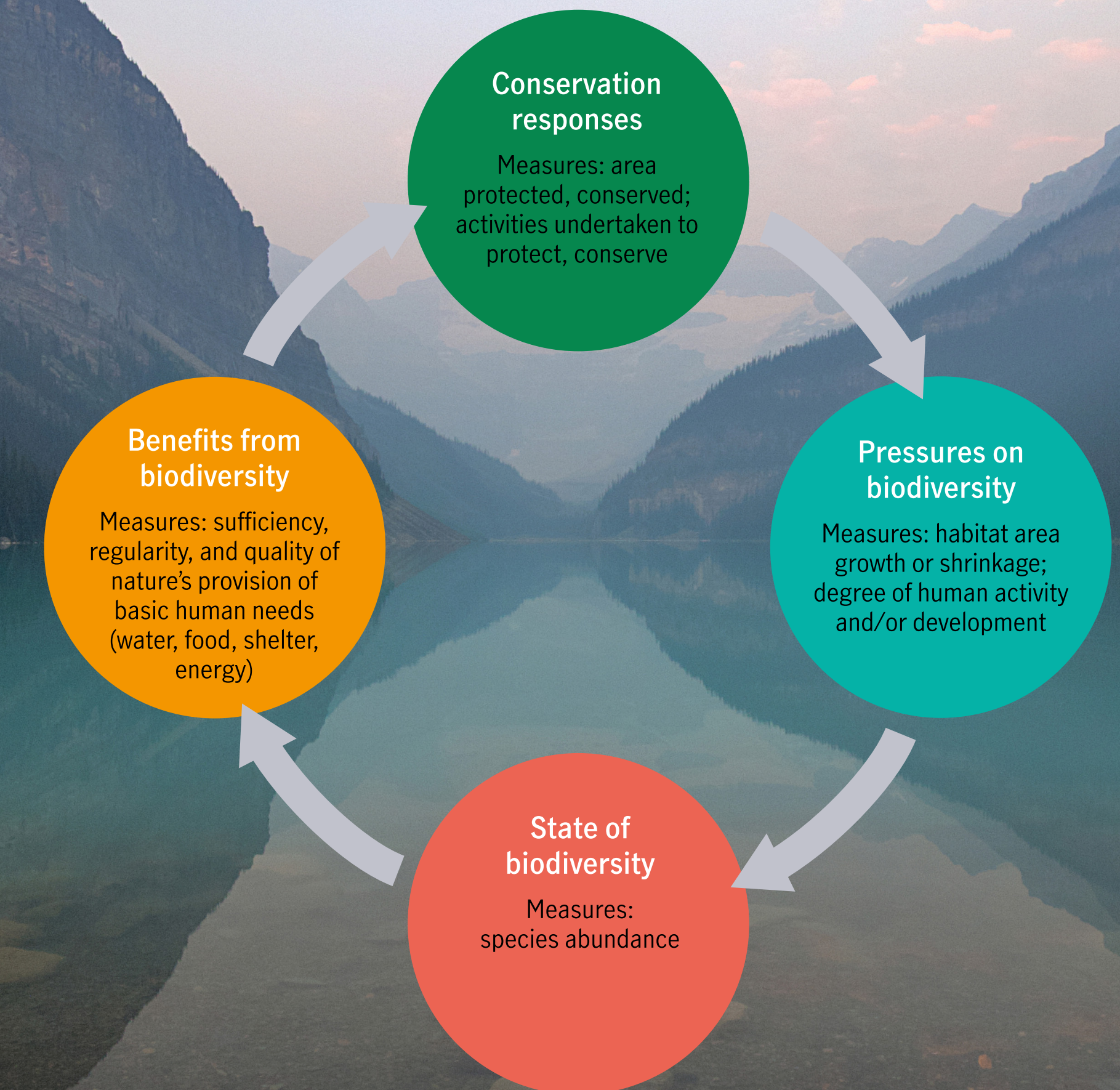
The assess loop is where the nature-positive ecosystem map gets messy—and interesting. More than half of the map consists of frameworks, methodologies, measurement tools, and metrics that enable a business to assess its impact on nature. There’s no one-size-fits-all approach to measuring the health of nature or a business’s impact on it. On one hand, the availability of customized methods is helpful, allowing for industry-specific approaches geared to implementation. On the other hand, this creates confusion: Which tools should companies use? How are they all related? Are some better for certain businesses or sectors than others?

The crux of the interaction between business and nature is the *impact* the business has on nature and the *dependency* of the business on nature—and how they’re measured. Nature positive implies a comparison, differing from nature negative. The question boils down to whether business activities have an overall positive or negative impact on nature.

Knowing the answer is critical. As the state of nature improves, so will its benefits to us, which incentivizes conservation, and further reduces the pressure on nature.

The opposite is true if the state of nature degrades. But in order to know whether the state of nature is improving or worsening, we need to be able to measure it. While there are no perfect, single methods for achieving this, the International Union for Conservation of Nature (IUCN) illustrates that [meaningful measurement is possible](#), using the common Pressure-State-Benefit-Response framework, as shown in this example for biodiversity.

Pressure-State-Benefit-Response framework (biodiversity)



Source: Modified from Sparks et al, 2011. For illustrative purpose only.



We've explored many measurement tools and metrics in order to identify the frameworks and methodologies most in line with our commitments. For us, the most helpful tools are industry specific, provide results that are sensitive to land management practices (otherwise, change can't be measured), and can integrate with our existing data collection systems. Data system integration is imperative because many existing tools don't lend themselves to the type of field data commonly captured by land managers.

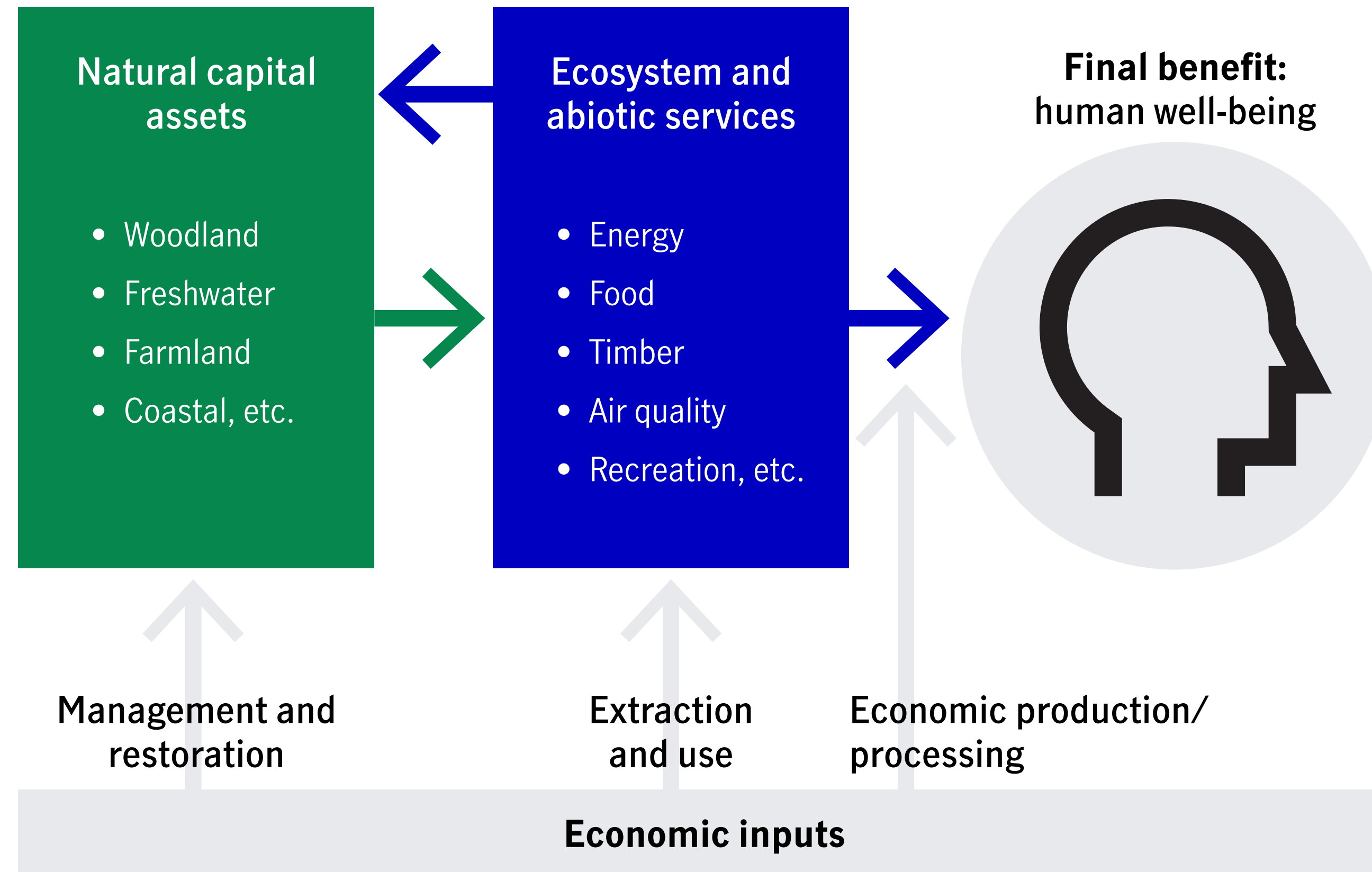
Measuring the state of nature and the pressures on it is helpful for understanding whether it's improving or declining, but measurement by itself doesn't cause nature to improve or decline. In order to improve the state of nature, we need to value it. This is where natural capital accounting (NCA) enters the picture. NCA provides a standardized approach to measuring the assets that constitute nature, the services those assets provide, and the value we derive from those services, whether qualitative, quantitative, or monetary.

The Natural Capital Protocol (NCP) framework provides the most guidance specific to our finance, forestry, and agricultural activities, using vocabulary familiar to both our finance teams and on-the-ground managers. Sector-specific NCP publications highlight specific business risks, costs, and benefits, and provide the most detailed

guidance on setting valid baselines of any framework or tool that we've encountered. In this framework, setting baselines includes identifying stocks and flows that contribute value to the company through the provision of ecosystem services. The [Exploring Natural Capital Opportunities, Risks and Exposure tool](#) from the UN Environment Programme Finance Initiative is designed to help the finance industry identify which ecosystem services may be affected by investments in various sectors. We began using NCA in 2018, developing approaches to [value the health benefits of understory plants](#) as well as to [value ecosystem services from plantation forestry in New Zealand](#).

The recent development of the first natural capital standard, BS 8632, should enable such analyses to be standardized and scalable and make them mainstream. NCA specifies the use of natural capital balance sheets and natural capital income statements, allowing companies to track changes in natural capital over time. Activities that increase the stock of natural capital are *enhancements*, and those that decrease it are *deteriorations*. These can be added together to calculate aggregate natural capital flows. Positive flows reflect a nature-positive company, and vice versa. Verifying net positive ecosystem impact is a crucial first step for us as we engage with emerging ecosystem services markets as part of our nature-positive agenda.

The links between assets, services, and final benefits



Source: ['Enabling a Natural Capital Approach guidance', Department for Environment, Food & Rural Affairs, August 4, 2021.](#)

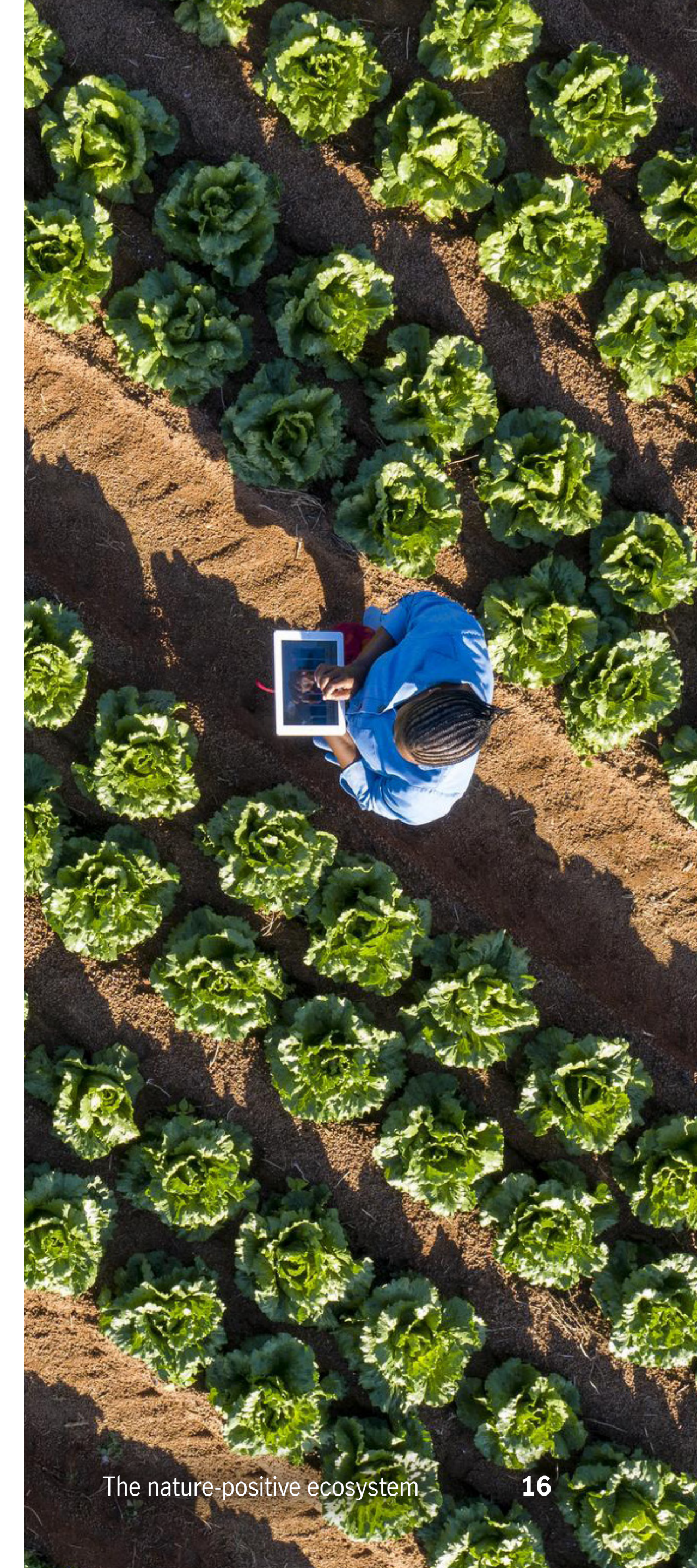
Within the natural capital framework, various tools are available for estimating asset managers' stocks and flows of natural capital, although none of them can replace internal land use data and good recordkeeping. In order to be valuable, such tools must:

- Cover the geographical extent of our operations (e.g., Artificial Intelligence for Environment & Sustainability System of Environmental and Economic Accounting Explorer)
- Allow us to identify where our natural capital stocks might support participation in developing ecosystem services markets (e.g., the U.S. Environmental Protection Agency EnviroAtlas)
- Identify areas in which nature-positive actions can have the greatest impact (e.g., the [Key Biodiversity Areas \(KBA\) Partnership](#), designed to operationalize the IUCN frameworks for business). While we have collaborated with NatureServe to identify and report on threatened and endangered species occurrence for years, the presence of threatened and endangered species is insufficient to suggest positive nature impact, and we suggest using NatureServe data through the KBA Partnership for greater context.

We haven't had the capacity to evaluate every framework, methodology, tool, and metric, but we feel confident that no one tool can do everything—at least not yet. This again highlights the need for collaboration with other companies in the same sector to identify the most relevant resources for advancing the nature-positive agenda.

Nature itself is priceless, but the ways in which businesses and employees depend on and affect nature throughout the supply chain are quantifiable. Using the language of accounting to articulate businesses' relationship to nature can build a business case and set universally understood baselines for nature-positive action. We're actively working on applying NCA across our global investment portfolio, and we look forward to sharing our progress publicly in the future.

“Nature itself is priceless, but the ways in which businesses and employees depend on and affect nature throughout the supply chain are quantifiable.”



A photograph of a river flowing over rocks in a forest. The water is clear and shallow, with many large, smooth, light-colored rocks visible. The surrounding forest is lush with green trees and foliage. The scene is captured from a low angle, looking down the river.

4 Disclose

Whereas the Task Force on Climate-related Financial Disclosures (TCFD) governs and informs climate disclosure, we expect that the forthcoming Taskforce on Nature-related Financial Disclosures (TNFD) will govern and inform nature disclosures. Officially launched in June 2021, [the goal of the TNFD](#) is to “provide a framework for organizations to report and act on evolving nature-related risks, in order to support a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes.”

Manulife Investment Management was among the 75 members of the informal working group that helped determine the scope and mandate of the TNFD, and we’re currently members of the [TNFD Forum](#), a “global and multi-disciplinary consultative network of institutional supporters who share the vision and mission of the TNFD.” As we look for TNFD to develop and disseminate its guidance, we can expect investors to demand nature-related disclosures more frequently. Following the formula of TCFD, these will include:

- the business’s nature-related governance, strategy, risk management, and metrics and targets
- impacts and dependencies of the business on nature

We expect TNFD to leverage many of the learnings of the TCFD to speed its adoption once the disclosure framework is launched.

Moving *forward*

Our major realization when our timberland and agriculture businesses engaged with the nature-positive ecosystem map was that we're fairly well represented in terms of collaboration and commitments. We found areas where we could improve our nature-related disclosures within our collaboration and commitments and increase our familiarity with the frameworks, methodologies, measurement tools, and metrics subnodes. This is where we focused our efforts, and we're looking forward to adopting further quantitative approaches for thinking about nature because we believe that lends itself to more explicitly valuing it. And, ultimately, valuing nature more highly is what everything in the ecosystem map aims to encourage.

Manulife Investment Management

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Manulife Investment Management

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