

Water *statement*

March 2024

At Manulife Investment Management, we're committed to helping clients achieve their objectives and build resilient portfolios. Where appropriate, we're also committed to positively affecting nature and building portfolios that are resilient to the effects of climate change.

As described by the United Nations, "climate change is primarily a water crisis," as climate risk is being observed through water scarcity and water-related hazards.¹ As such, Manulife Investment Management believes water-related risks and opportunities can be financially material factors to consider and should be integrated into investment processes and operational asset management, where appropriate.

¹ Please see [UN-Water](#) for more details.

We believe:

- Physical access to sufficient, safe, acceptable, and affordable water is a basic human right.
- Fresh water is essential for the success of the economy, many types of investments, and the health of society and nature; however, future supply is challenged by a changing climate, and demand for freshwater resources continues to increase.
- Investment managers have a responsibility to clients to employ robust approaches to valuing water and water-related risks as a part of the investment process, where appropriate.

The state of global water

As was reinforced at the 2023 United Nations Water Conference, the international arena is increasingly focused on the importance of water resources for our future.

The globe is abundant with water, but usable fresh water is comparatively scarce. Only 0.5% of the Earth's water is available fresh water.² Physical access to sufficient, safe, acceptable, and affordable water resources is essential for livelihoods, health, and ecosystems, and therefore is systemically important to the global economy. However, fresh water isn't evenly distributed or predictably available across all regions of the world and population centers. Today, more than 50% of the world's cities and 75% of all irrigated agricultural areas are experiencing water shortages on a recurring basis.³

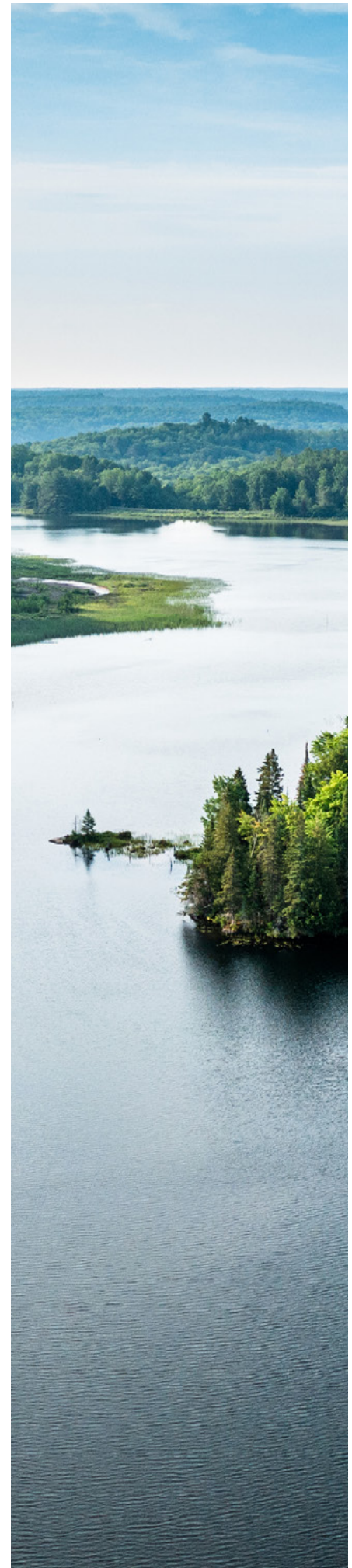
Climate change, extreme weather events, and the unsustainable use of limited freshwater resources are contributing to the scarcity of fresh water and changing the variability and uncertainty of access to it. This is causing measurable negative economic, social, and environmental effects.⁴

Water scarcity is already being experienced by nearly four billion people, and by as early as 2025 more than half the world's population could be living in areas facing water scarcity. —UNICEF⁵

Water risk (storms, flood, and drought) could reduce global GDP by as much as \$5.6 trillion between 2022 and 2050. —GHD Group⁶

Despite material improvements in water-efficiency technologies, global demand for water is increasing. Global water demand is projected to continue to increase by about 1% per year, meaning global water demand could increase from current levels by as much as 30% by 2050.⁷ As demand increases, the effects from the absence of robust water governance will continue to become more acute, demonstrating significant gaps in regulations enforcing sustainable water management in key regions across the globe. Although this is improving in some regions, there's generally poor coordination and cooperation between countries and jurisdictions that rely on shared water resources.⁸

² Please see the [U.S. Bureau of Reclamation](#) for more details. ³ Please review the [United Nations' 2023 Water Conference review](#). ⁴ Please see [chapter 4](#) of the Intergovernmental Panel on Climate Change Sixth Assessment Report. ⁵ Please see water-scarcity information from [UNICEF](#). ⁶ Please see [Aquanomics'](#) site for more details. ⁷ Please see the [UN's 2019 world water development report](#) for more details. ⁸ Please see the [UN's 2021 summary progress](#) report on sustainable development goal 6—Water and sanitation for all.



Consideration of water-related factors in investment decision-making

We manage investments in a global economy and a society dependent on water. But in an environment in which material water challenges and uncertainty exist, making informed investment decisions becomes more complex. In this environment, potential opportunities exist for investment managers who are able to more accurately value and account for future water opportunities and risks, with disadvantages for those who aren't.

Investors need methodologies to be able to appropriately account for and value water, and evaluate potential risks, in order to identify the potential future value of water-related investments.

Access to water has historically been highly subsidized,⁹ creating distortions in the ability to accurately value water as a financial and natural capital asset. This makes it difficult to appropriately account for the underwriting risks associated with not having access to sufficient, safe, acceptable, and affordable water resources.

Investors need data and expertise to be able to identify, analyze, and mitigate these risks, while helping highlight areas of opportunity.

Under a changing climate, the risks and severity of storm and flooding events are also increasing. Not only do these exacerbate existing risks, but they also potentially expose more regions to these types of water risks.

Investors need expertise to be able to successfully navigate water-related regulatory change and its potential impact on assets and investments (both from an asset value and income return perspective).

Regulation associated with water resources is also rapidly changing, especially in water-stressed regions. Many regulatory actions are targeted at preventing unsustainable extraction of water and more appropriately allocating water resources among competing uses—such as industry, urban, and environmental uses. Regulation can reduce or change access to water (positively or negatively) or increase costs associated with access to water.

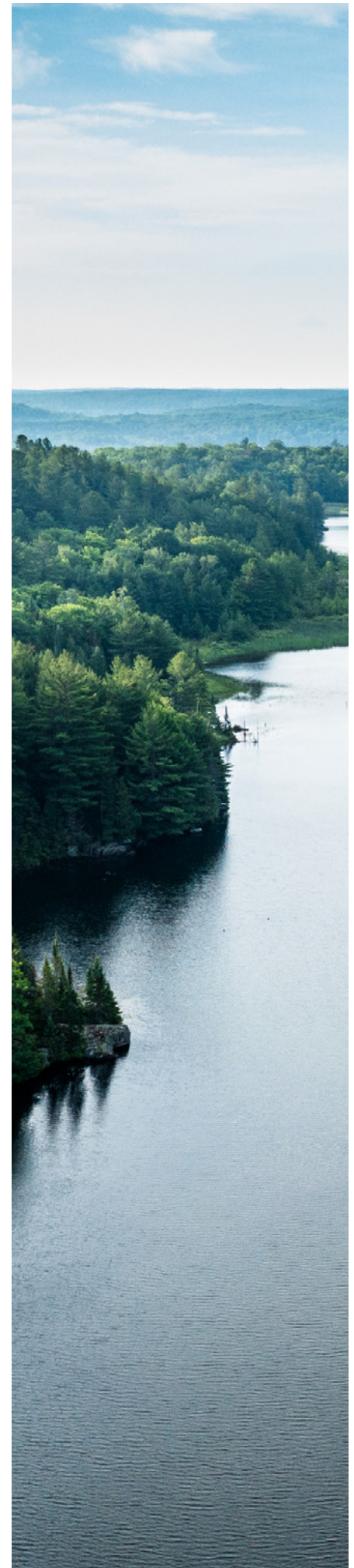
Our approach to water in the investment process

When water is materially relevant to an investment, Manulife Investment Management views it through a lens of value protection and value creation. Value protection involves identifying water risk that could harm the underlying asset's value over time or affect income and returns. Value creation, by contrast, involves identifying opportunities to capture future asset value appreciation, maximize operating margins through water, or contribute to resource stewardship and environmental, social, and governance (ESG) activities, where appropriate.

Where material, we manage water-related risks and opportunities proactively and responsibly because these factors have the potential to affect investment outcomes, especially for real assets. Therefore, where material, we apply water risk/opportunity in our investment decisions, due diligence, risk assessment, and stewardship activities.

The diverse nature of asset classes we manage investments in necessitates a flexible and dynamic approach to how we consider water-related factors in the investment process. While some assets may have high dependencies on water, we also invest in a range of assets with minimal dependencies on water. Our flexible approach accounts for the degree of influence we have over water risks and opportunity related to the assets in question and the materiality of water-related factors among other investment factors.

⁹ "Davos edition 2020, Research Institute, Water Scarcity: Addressing the key challenge," Credit Suisse, 2020.



Our water-related value proposition

Asset type	Approach	Example(s)
Timberland and agriculture	<ul style="list-style-type: none"> • Watershed protection • Sustainable water management and operations • Flood and climate risk assessments • Water as a key part of investment strategy 	<ul style="list-style-type: none"> • In forestry, we deploy holistic silviculture techniques to best protect watersheds and ensure sustainable management of timberland. • In agriculture, watershed protection, water resource management, climate and flood risk, and water investment have become a key focus of our agricultural strategy and operations, enabling us to meet our clients' goals, our values, and principles of good stewardship. • Given the importance of water to agricultural investments, we've built a dedicated in-house global water team with expertise spanning all pillars of our agriculture business from investment underwriting to operations, policy, and sustainability. • Our dedicated team of water resource managers and operational leaders proactively implement advanced irrigation technologies and techniques both to conserve water and to provide crops the water they need.
Real estate	<ul style="list-style-type: none"> • Sustainable water management and operations • Water resources and resilience to water-related natural hazards as part of investment diligence • Water efficiency as part of new development guidance 	<p>Asset management</p> <ul style="list-style-type: none"> • Our real estate team's proprietary sustainable building standards address the impact properties have on the environment, including water. Properties must report on their water consumption on an annual basis. • Property teams are asked to track their water consumption regularly to achieve and implement water-saving measures. • Office and residential properties conduct a water audit every three years as a minimum requirement. <p>Development/new construction</p> <ul style="list-style-type: none"> • Minimum design requirements include the consideration of installation of green roofs for all usable roof space, which contributes to sustainable rainwater management. • Design specifications encourage new buildings to achieve green building certifications, including rainwater management and energy-efficiency initiatives, such as reducing outdoor water consumption and installing submeters. • As a part of our development partner and contractor agreements, contractors are requested to implement a runoff and soil management plan that aims to protect natural water systems, soil function, and habitats by controlling water runoff from the construction site and restoring disturbed soils. The plan identifies receiving water bodies or systems (e.g., rivers, groundwater, sewers, stormwater systems) and outlines methods to minimize pollution (e.g., soil sedimentation runoff, chemicals from the site). The plan also outlines methods to minimize site soil disturbance and restore disturbed soils, where possible.

Asset type	Approach	Example(s)
Infrastructure	<ul style="list-style-type: none"> Water-related issues are evaluated during the pre-investment due diligence stage Water metrics are part of our post-investment monitoring program 	<ul style="list-style-type: none"> Where materially relevant during a deal's due diligence stage, we currently consider whether water-related issues are material to the investment opportunity. This may include a company's direct water usage, the exposure of its operations to water-stressed regions, and its management of wastewater. If relevant, we'll conduct additional due diligence and may consult with our dedicated in-house global water team. Water-related metrics are included in our voluntary annual ESG data monitoring request process, including metrics on water inflows/withdrawals and outflows/ discharges where deemed material in a company's GRESB assessment, as well as related metrics through our voluntary annual ESG data collection for portfolio companies (e.g., the company's water-related key performance indicators, any air/water emissions limit violations). We continuously assess improvement opportunities to enhance our data collection measurement and disclosures of water-related risks and opportunities.
Private equity and credit	<ul style="list-style-type: none"> Water-related issues are evaluated during the pre-investment due diligence stage Water metrics are part of our post-investment monitoring program 	<ul style="list-style-type: none"> Where materially relevant during a deal's due diligence stage, we currently consider water-related issues. This may include a company's direct water usage, the exposure of its operations to water-stressed regions, and its management of wastewater. If water-related issues are deemed material, we'll conduct additional due diligence and may consult with our dedicated in-house global water team. In the post-investment stage, we've included water-related metrics as part of our voluntary annual ESG questionnaire that we send to our portfolio companies. Although the private equity industry is still at a nascent stage when it comes to reporting ESG metrics, we're focused on improving the level of disclosures so we can better monitor, assess, and benchmark water-related risks and opportunities.
Public equity and fixed income¹⁰	<ul style="list-style-type: none"> Where material, water-related issues are considered in our investment decision-making We can engage with companies on their water strategy We can engage directly or collaboratively on systemic water risks 	<ul style="list-style-type: none"> We can integrate material water-related issues into our investment analysis and decision-making. As we consider the potential effects of water-related risks and opportunities on investee companies' financial performance, we may evaluate how these factors may influence valuations, risk management, and portfolio construction. For publicly traded instruments, we can engage investee companies where we identify water-related dependencies and/or impacts. We can also incorporate these into our voting decisions relative to equity holdings where we have proxy voting rights. This is especially important for companies operating in areas of high water stress and in industries with high water-quantity risk or high water-quality risks. We can encourage these companies to work toward assessing and monitoring their dependencies and impacts, reporting their activities, reducing their water consumption and pollution, and investing in solutions. Where appropriate, we can also collaborate with other like-minded investors and stakeholders.

¹⁰ The approach described for public equity and fixed income relates to portfolios managed by Manulife Investment Management public markets. The approach does not apply to public equity and fixed-income-type investments managed by Manulife Investment Management private markets legal entities.

Our approach to water in asset stewardship

Water is a key link between nature, climate, and people. As such, an emphasis within our investment asset stewardship approach is to assess and manage material water-related factors proactively and responsibly.

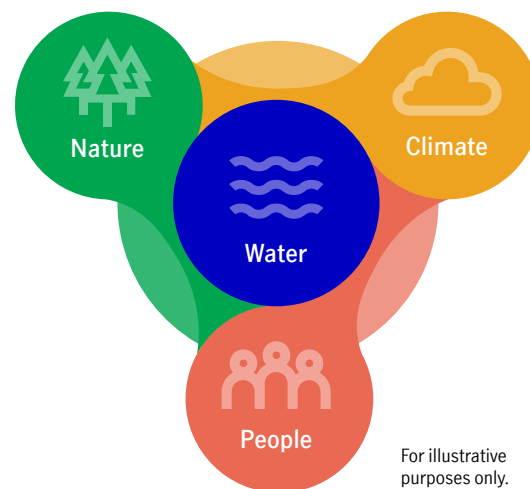
As the world's largest natural capital investment manager,¹¹ our values and principles of good stewardship include the importance of our reputation on water matters. Where we operate private assets, our participation in water asset stewardship activities is guided by whether assets are directly or indirectly managed.

For certain agriculture assets, we have a high degree of direct asset management and are closely involved in water asset stewardship activities. For example, we use advanced water-efficiency technologies, use satellite and fixed-wing aerial imagery, employ ground-based calculations for precision agriculture irrigation, and deploy groundwater banking programs to recharge aquifers. We can also work in partnership with environmental water groups to preserve wetland habitat. We recognize water can be a local issue, so we also seek to collaborate and engage with communities in which we operate and invest to manage water resources appropriately.

For timberland investments, watershed and drinking water protection is one of our key sustainability and asset stewardship priorities. Protecting and improving watersheds is vital for the ecosystems and communities that depend on them. Where possible, we protect sensitive lands, managing riparian buffer zones, and adhere to strict water and land management regulations, policies, and industry best practices.

Where we don't directly operate private assets, we seek to build meaningful partnerships with leading operators and sponsors. Once we invest, our team works, where possible, to maintain a close relationship with the management teams of companies and our investment partners to continue monitoring material aspects of the investment, including nature and biodiversity factors.

For publicly traded instruments, our public markets business seeks to engage investee companies where we identify material water-related dependencies and/or impacts that could pose economic risks or benefits for our clients. Proxy voting is another tool we can use for active ownership through which we can incorporate water-related factors in our voting decisions on behalf of clients. This is especially important for companies operating in areas of high water stress and in industries with high water-scarcity risk or high water-quality risks. We can encourage these companies to work toward assessing and monitoring their dependencies and impacts, reporting their activities, reducing their water consumption and pollution, and investing in solutions.



Collaborations with stakeholders on water¹²

Across various parts of our business, we've proactively collaborated with external groups as a part of our water stewardship initiatives.

- **Ceres Investor Water Hub:** As members of this group, we've contributed to the [Investor Water Toolkit](#) and Water Handbook. We've also contributed to the launch of the Valuing Water Finance Initiative as a global investor-led engagement initiative.
- **Leading Harvest Standard:** Leading Harvest is an outcome-based sustainability standard designed to optimize sustainable farmland management as part of a comprehensive assurance program. Manulife Investment Management's timberland and agriculture team (then operating as Hancock Natural Resource Group) is a founding member and contributor to Leading Harvest. In addition, 100% of Manulife Agriculture's U.S. agriculture platform is certified under the Leading Harvest Farmland Standard.¹³ A key component of the Leading Harvest Standard is an assessment of the protection and stewardship of water resources.
- **Cambridge Institute for Sustainability Leadership (CISL):** Manulife Investment Management is a member of the CISL Investment Leaders Group. The group leverages the work of the university—for example, the Dasgupta Review—to provide guidance, case studies, and handbooks on integrating nature into finance.

¹¹ IPE research, as of January 29, 2024. Ranking is based on total natural capital AUM, which includes forestry/timberland and agriculture/farmland AUM. Firms were asked to provide AUM and the as of dates vary from December 31, 2022, to December 31, 2023. ¹² While participating in a variety of collaborative engagements, we retain discretion and make unilateral and independent investment decisions. ¹³ Certification as of December 31, 2022, by Leading Harvest and is based on an annual assessment of the conformation to the Farmland Management Standard. Most current data shown. Please see leadingharvest.org.

Terms and definitions

Water resources: the entire range of natural waters that occur on Earth, in their various states, including water above ground, like lakes, streams, river, and precipitation, and stored bodies of water below ground often known as aquifers

Water security: a reliable availability of an acceptable quantity and quality of water for human, socioeconomic, and ecosystem needs

Water quality: a condition of physical, chemical, and biological parameters that meet human, plant, and ecosystem standards

Water efficiency: the practice of reducing water use to meet basic water requirements

Water governance: the political, social, economic, and administrative systems that influence the use and management of water



Investing involves risks, including the potential loss of principal. Financial markets are volatile and can fluctuate significantly in response to company, industry, political, regulatory, market, or economic developments. These risks are magnified for investments made in emerging markets. Currency risk is the risk that fluctuations in exchange rates may adversely affect the value of a portfolio's investments.

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Manulife Investment Management

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