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Timberland and farmland – natural climate solutions and natural options

Manulife Investment Management

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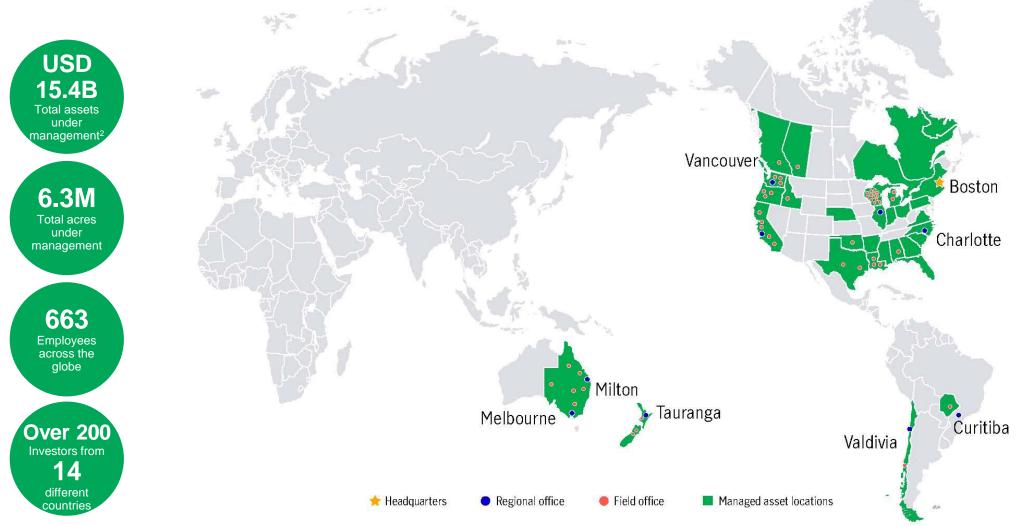
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Global, integrated, sustainable timberland & agriculture investments

Manulife IM is the world's largest timberland¹ investment manager and a leading agriculture investment manager



As of March 31, 2022. 1 Source: Fastmarkets RISI Global Timberland Ownership and Investment Database as of March 11, 2022 2 Total AUM is managed on a discretionary and non-discretionary basis for the General Account, its affiliates and third-party clients 3 Includes offices associated with client owned operating companies.

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As a manager of timberland and agriculture investments, we provide our clients with opportunities to invest their capital in a sustainable and responsible manner that can generate positive impacts for society and the environment.

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Our commitment

We aim to conduct all our business activities in accordance with leading industry standards and certification systems to:

- · maintain the long-term health and productivity of our properties
- preserve and enhance the quality of our environment and local communities
- empower our people
- provide competitive returns for our investors

We also engage in the timberland and agricultural industries to promote and encourage positive SRI outcomes.

We're credible and transparent

- ✓ 100% of our U.S. farmland is certified by the Leading Harvest farmland management standard^{1.}
- ✓ 100% of Manulife IM-managed forests are certified sustainable under SFI©², FSC©³, or PEFC⁴.
- ✓ We participated in the working group helping to define the scope and scale of the Taskforce for Nature-related Financial Disclosures⁵.
- ✓ We collaborate with the World Business Council for Sustainable Development, the GIIN, and the MIT Joint Program on the Science and Policy of Global Change.



1 As of May 17, 2021. Includes both third-party leased and directly operated assets. Oliver Williams, global head of agriculture, is current chair of the Board of Directors for Leading Harvest. For more information on Leading Harvest, please see https://forests.org/ 3 https://strategiancometric-party-lease-and-policy-global-change. https://strategiancometric-party-lease-and-policy-global-change. https://strategiancometric-party-lease-and-policy-global-change. https://strategiancometric-party-lease-and-policy-global-change. https://strategiancometric-party-lease-and-policy-global-change. https://strategiancometric-party-lease-and-policy-global-change.

Timberland and agriculture directly contribute to solutions for four of the greatest challenges facing our world over the next decade.

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Climate change

 Forests are among the top natural climate solutions, and both forests and farms act as a significant carbon sink¹. Sound management enables carbon sequestration to mitigate climate change.

Nature loss

- Sustainable timberland and agriculture investing focuses on protecting and enhancing biodiversity. We believe healthy ecosystems provide immense value to the vitality of communities and economies.
- ✓ Managing timber plantations intensively to produce harvested wood products lessens the need to conduct harvesting in more sensitive forests

Water scarcity

✓ Sustainable water management practices are crucial to agricultural productivity and access to clean water is vital to local communities. We focus on water conservation and efficiency to avoid waste, using modern farming practices and irrigation technologies.

Rising inequality

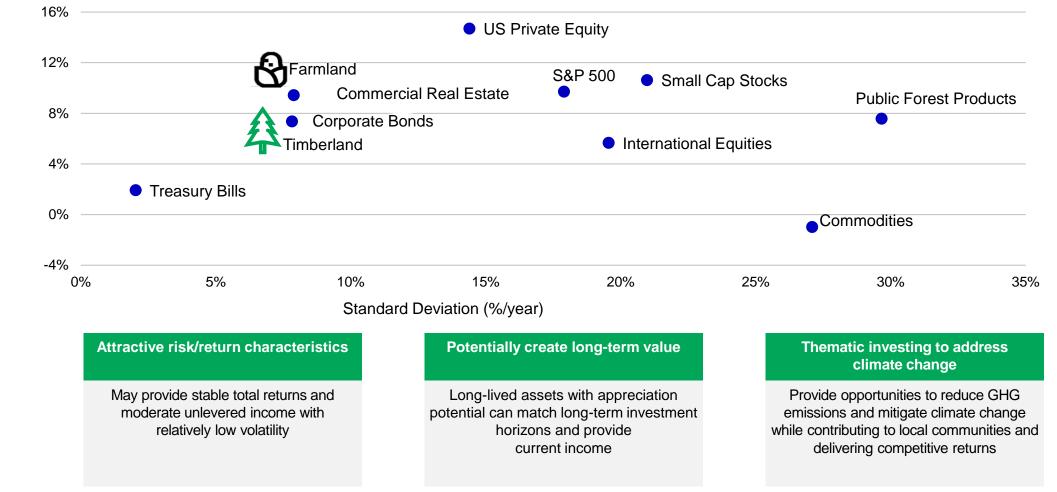
 Production of crops and timber is vital for today's growing global population and can provide rewarding employment in rural communities while protecting valuable resources such as soil and water.

Source: 1 Griscom, B., et al, Natural Climate Solutions, *Proceedings of the National Academy of Sciences*, October 16, 2017: <u>https://www.pnas.org/doi/10.1073/pnas.1710465114</u>.

Why timberland and farmland?

Investments in timberland and farmland have historically experienced low volatility and attractive risk adjusted returns





See sourcing information on page 22. Past performance does not guarantee future results.

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Why timberland and farmland?

Low correlation with traditional assets and moderate inflation protection

1.0

0.67

0.39

0.5



-0.06

-0.01

-0.07

0.0

-0.19

-0.5

-1.0

0.09

0.13



Historical US\$ correlations with timberland (1997-2021)

Can provide diversification benefits to a portfolio	May help preserve value in a portfolio	Favorable market fundamentals	Timberland and farmland have exhibited moderate correlation
Timberland and farmland returns are generally uncorrelated with returns to major asset classes	May provide inflation protection, particularly in periods of relatively high inflation	Increasing consumption trends via global population and income growth	Lack of complete correlation can provide additional diversification benefits and an expanded opportunity set within a portfolio

U.S. timberland/ agriculture

U.S. CPI

International equities

U.S. small cap stocks

U.S. Treasury bills

U.S. corporate bonds

U.S. Commercial real estate

S&P 500

Diversification does not guarantee a profit nor protect against loss in any market. See sourcing information on page 22.

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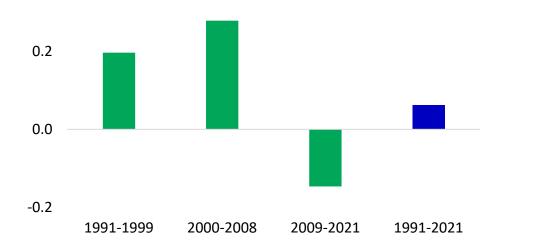
Natural resources and inflation – a dynamic correlation pattern

Correlation varied with time as various market factors evolved

Farmland returns positively correlate to CPI inflation 1, 2, 3

NCREIF Farmland Index and inflation correlation by period (1991-2021)

0.4

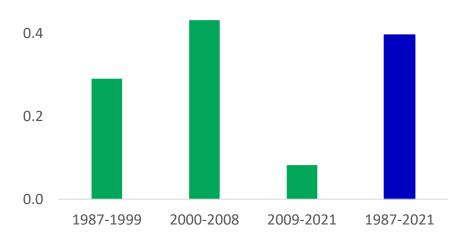


- Average correlation between farmland and inflation is a mild 6%
- Farmland correlation to inflation stayed near or above 20% during 1991-1999 and 2000-2008, before the GFC
- Correlations broke pattern during 2009-2021, as inflation remained low for a protracted underwhelming recovery post the GFC, while farmland delivered healthy returns

Timberland returns positively correlate to CPI inflation 1, 2, 3

NCREIF Timberland Index and inflation correlation by period (1987-2021)

0.6

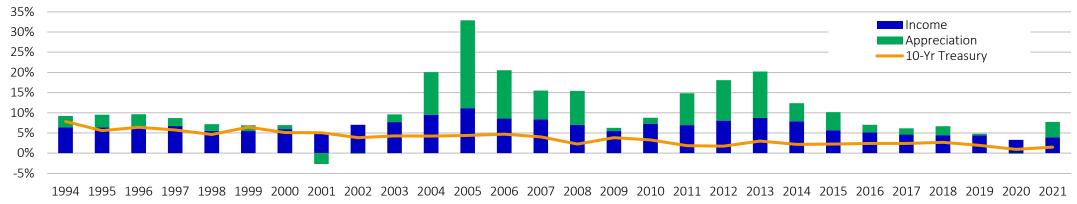


- Average correlation between timberland and inflation is a positive 40%
- Timberland correlation to inflation stayed near or above 25% during 1987-1999
 and 2000-2008, before the GFC
- Correlations subdued during 2009-2021, as inflation remained low post the GFC, while timberland experienced several years of significantly positive returns.

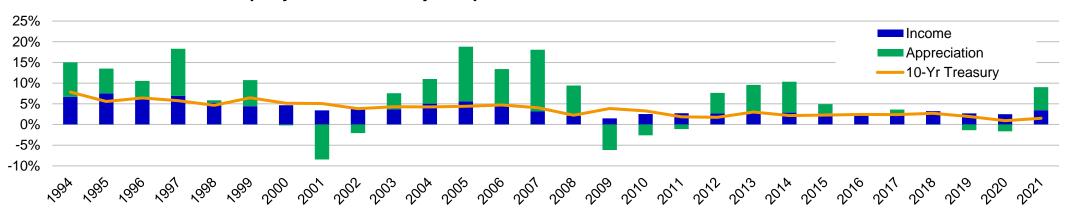
Source: 1 NCREIF Farmland Index, as of Q4 2021. 2 U.S. Department of Labor Bureau of Labor Statistics, as of Feb 2022. 3 Manulife Investment Management research

Providing income for the long-term investor

Consistent current income with long-term appreciation potential



U.S. NCREIF Farmland Property Index returns by component



U.S. NCREIF Timberland Property Index returns by component

The NCREIF Timberland and Farmland Property Indices are comprised of domestic (United States) timberland and farmland investment properties held in an institutional investment environment. Please refer to the benchmark and sourcing information on page 22 for further information.

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Gaining exposure to core timberland and agriculture

Aims to maximize risk-adjusted total return, generate income, preserve capital, and realize long-term appreciation



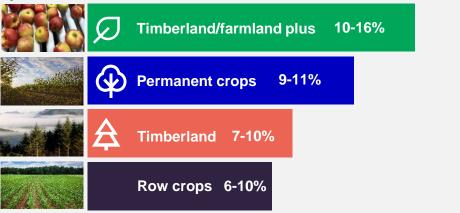
Appreciation

- · Crop and timber price changes
- · Biological growth
- · Gains in productivity
- · Change in land values
- Climate change mitigation

Current income

- Rental income from land leases
- Revenue from crop and timber sales
- Carbon and/or wetland mitigation banking credits
- Realizing conservation or higher and better use values

Expected nominal total returns

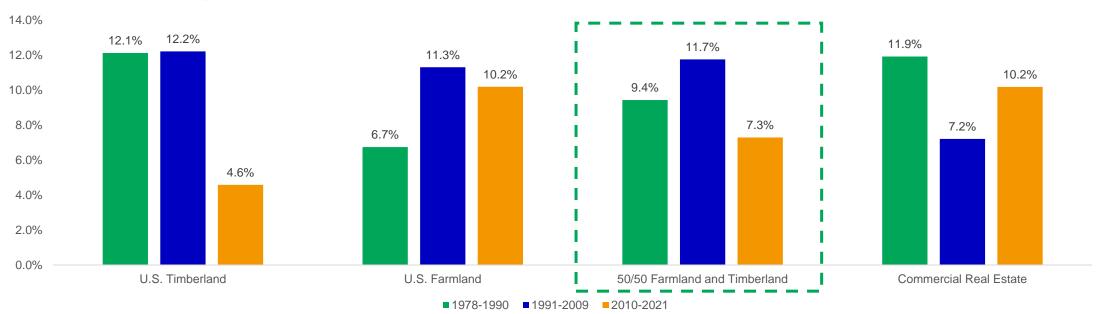


For illustrative purposes only. Forecasts are not meant as predictions for any particular asset class, fund or investment vehicle. All expected returns refer to a five+ year horizon and are presented on a nominal basis, unlevered, gross of investment management fees and do not guarantee future results. Actual returns may vary. Potential for profit as well as for loss exists. Source: Forecast from MIMTA Research as of December 2020.

A hypothetical combined timberland and farmland portfolio has shown consistent return performance over long periods of time

Timberland and farmland tend to perform differently under specific economic and policy conditions

Offsetting each other's weak performance periods, the simulated blended portfolio produced an average total gross return over the three periods of 9.5%



U.S. real assets average historical returns

The simulation above is theoretical and presented for informational purposes only. The results above are not based on the performance of actual portfolios and do not represent returns any investor actually attained. Simulated performance is not an indicator of future actual results. Index data may be indicative of a broad asset class's historical performance but is not representative of the investment team's methodology or performance. Investments reflected in such index data are generally expected to be similar to investments made by the Fund in terms of the amount of each investment, where the investments are located, the types of the investments, cash flows generated by investments, and the investment risks associated with those types of investment. As an investor of the Fund, however, you will not be able to directly participate in those investments, and the performance of a portfolio of actual investments is likely to be different. This performance information also does not include certain costs reflected in acquiring, managing and selling those investments, including a management fee and a performance of the model portfolio would be lower if those fees were included. Otherwise, this performance information is calculated similarly to calculations of actual performance of the NCREIF property-level information relating to the risks and limitations of considering hypothetical performance from 1978 to 1986 is sourced from the MINT synthetic indices John Hancock Timberland and U.S. timberland. Historical timberland performance in a aggregate tarmland and aggregate timberland asset seach representing 50% of the combined portfolio during the entit response of the general and a general performance in a aggregate timberland asset seach representing 50% of the combined portfolio during the entit response of the model portfolio during the entit response to investments, or "plus" investments, and the performance and timberland investments and timberland investments and timberland investments are located form the MINT

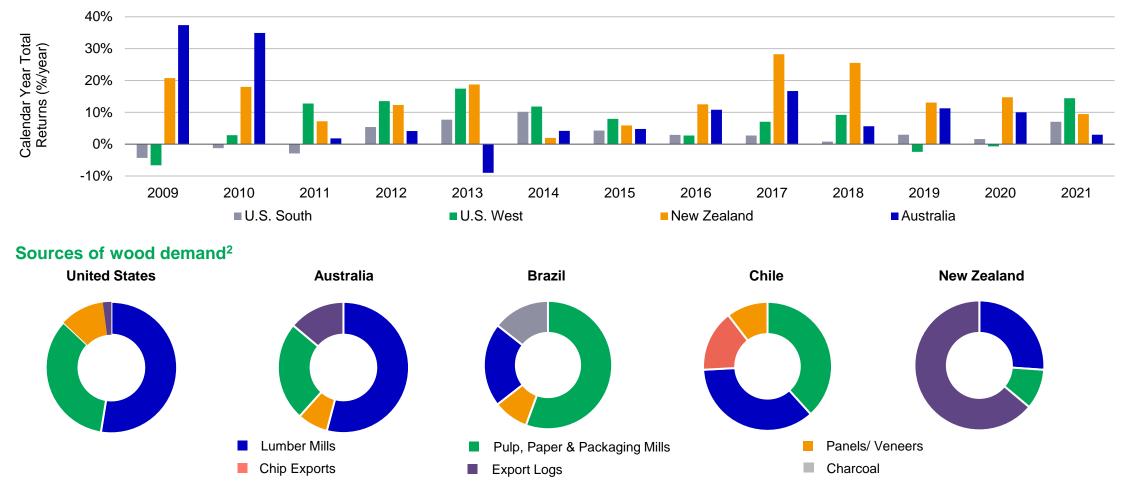
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Timberland investment strategies

Global diversification by species and end product creates value and can optimize return for investors



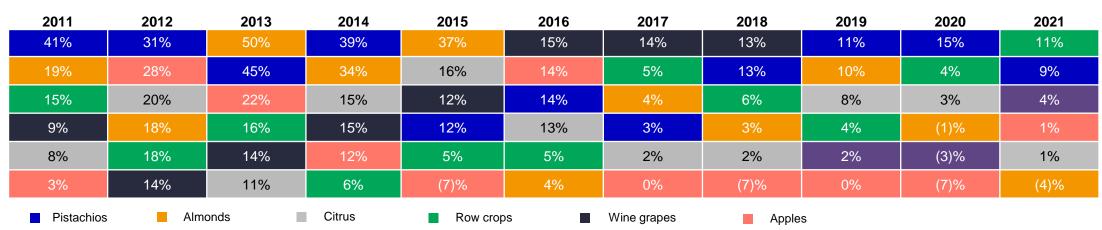


No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment. Past performance does not guarantee future results. 1 UD\$ Calendar Year Total Returns. Sources: U.S. Returns: NCREIF All Managers Total Returns; Australia and New Zealand Returns: Manulife IM timberland investments. 2 Sources: New Zealand: NZ MPI December 2021, Brazil: Poyry2018; Chile: INFOR 2020; U.S.: RISI 2021, Australia ABARES 2019/20. Most current available data shown.

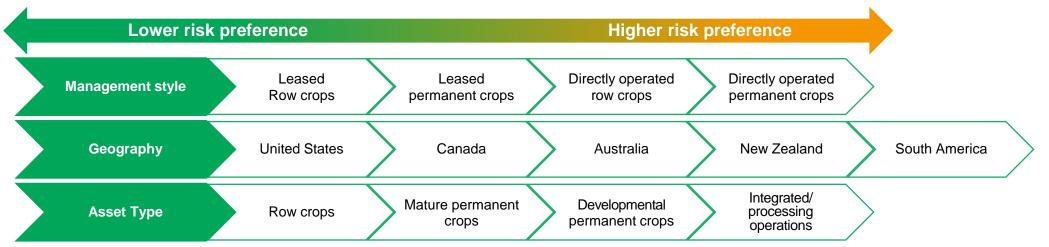
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Farmland investment strategies

Global diversification by crop type and operating structure can create value and optimize return for investors



NCREIF property level annual total returns by crop type¹



No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment. Diversification does not guarantee a profit nor protect against loss in any market. 1 USD Calendar Year Total Returns. Past performance does not guarantee future results. Sources: U.S. Returns: NCREIF Farmland Property Index All Managers Total Returns, 2011-2021. Please refer to "Benchmark Definition" on page 23 for further information

Diversifying portfolios can improve risk efficiency

Seek to mitigate risk with an investment strategy focused on building sustainable, diversified portfolios

Risks	Mitigating factors	
Timber and agriculture commodity price volatility	Portfolio diversification, active management	
Harvest volume (storm/fire, disease/pest)	Species and crop type diversification, geographic diversification, modern silviculture/farming techniques	
Property value/liquidity	Disciplined underwriting and comprehensive due diligence	
Water availability	Extensive due diligence on water quality and quantity, access to surface and subsurface water, asset selection, geographic diversification	
Weather	Diversification, modern silviculture/farming techniques	
Credit default/lease collection	Extensive tenant due diligence, required rental pre-payment, letters of credit	
Climate change	Comprehensive due diligence, diversification, modern silviculture techniques, and technology	







No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment. Diversification does not guarantee a profit nor protect against loss in any market.

Sustainability and responsible investing

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

Products

2 ZERO HUNGER

RESPONSIBLE Consumption

AND PRODUCTION

Sustainable food

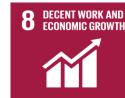
We produce healthy nutritious foods such as nuts, fruit, and vegetables consistent with planetary health¹



Climate stability

- Create carbon sequestration
 opportunities
- Invest in renewables and energy efficiency
- Sponsor climate change research through MIT²

Process



People empowerment

- Create jobs in rural communities
- Promote safe and healthy working and living environments
- Promote diversity, equity, and inclusion (DE&I)

Sustainable fiber

We produce sawtimber used in housing and pulpwood used in paper & hygiene products



Ecosystem resiliency

- Protect sensitive lands, biodiversity, threatened & endangered species
- Create conservation easements
- Sponsor working lands conservation organizations



Community prosperity

- Promote community engagement through volunteering and matching employee donations
- · Offer recreational land use
- Implement vendor code of conduct and human rights focus



Watershed protection

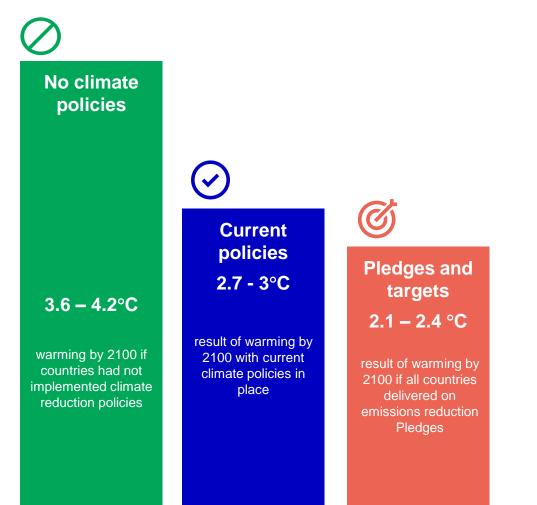
- Implement water use efficiency practices
- Utilize ground storage to capture rain and flood waters
- Healthy forests maintain and may improve water quality

As of December 31, 2019 Source: United Nations Department of Public Information Sustainable Development Knowledge Platform, <u>https://sustainabledevelopment.un.org</u> ¹ <u>https://eatforum.org/content/uploads/2019/01/EAT-Lancet_Commission_Summary_Report.pdf</u> ² https://globalchange.mit.edu/sponsors/current

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Climate change is one of the defining challenges of our time

Anticipated global warming by 21001



Even with all current pledges and targets fulfilled, we will not meet the goal of limiting global warming to 1.5°C².

GHG emissions must fall by 45% from 2010 levels by 2030 for global warming to be limited to $1.5^{\circ}C^{3}$.

Climate policies can amplify the risk of stranded fossil fuel assets amounting to more than **USD1-4 trillion** of global wealth⁴

1: IPCC special report

2: https://www.nytimes.com/interactive/2021/10/25/climate/world-climate-pledges-cop26.html#:~:text=Current%20policies%20put%20the%20world,degrees%20and%203.9%20degrees%20Celsius.

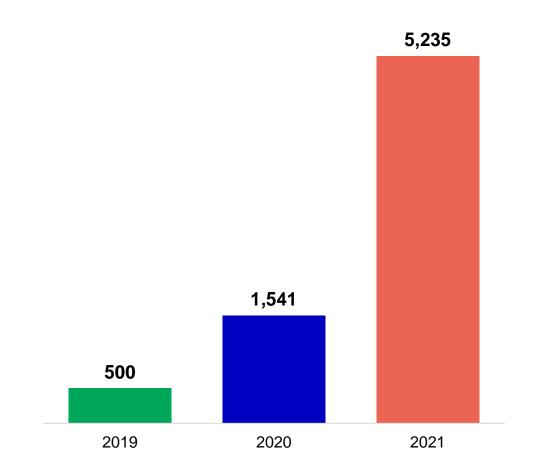
3: https://www.nature.com/articles/d41586-021-03431-4

4 https://www.nature.com/articles/s41558-018-0182-1

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The private sector is responding, often with unclear climate goals

Private sector net zero commitments^{1,2}



60% of Fortune 500 companies and 441 of the biggest investors have set a climate or energy-related commitment^{3,4}

3,000+ companies have set emissions reductions targets through SBTi²

>40%

of companies don't have a detailed

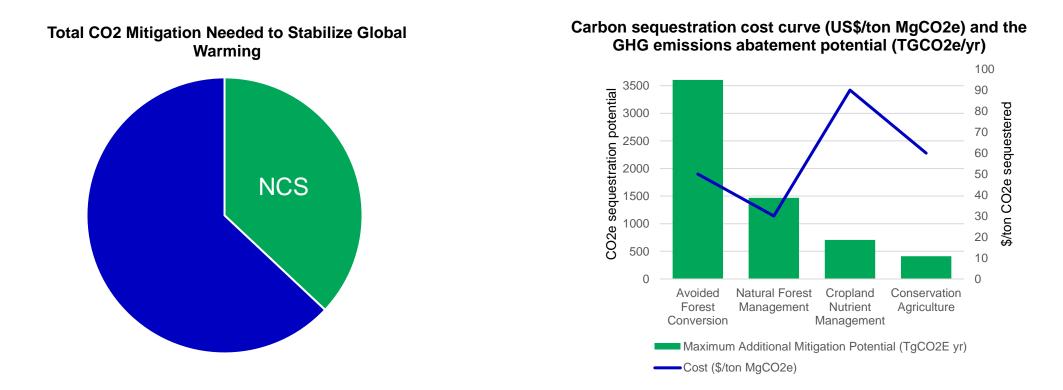
climate plan⁵

Sources: 1 https://eciu.net/netzerotracker as of June 2022 2 https://sciencebasedtargets.org/net-zero_as of July 2022 3 Power Forward 4.0. A Progress Report of the Fortune 500's Transition to a Net Zero Economy as of June 2021 4 https://unfccc.int/climate-action/race-to-zero-campaign as of July 2022 5 Net Zero Stocktake 2022 companies represent percentage of 702 Forbes Global 2000 companies with net zero targets as of June 2022

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Natural Climate Solutions are critical to achieving net zero goals

Contribution of natural climate solutions (NCS) to stabilize warming to below 2 °C



Natural climate solutions can provide 37% of cost-effective CO2 mitigation needed through 2030

Sources:

https://www.wbcsd.org/Programs/Climate-and-Energy/Climate/Natural-Climate-Solutions

https://unfccc.int/news/cut-global-emissions-by-76-percent-every-year-for-next-decade-to-meet-15degc-paris-target-un-report#:~:text=On%20an%20annual%20basis%2C%20this,the%202%C2%B0C%20goal

https://www.nature.com/articles/d41586-021-00090-3

https://www.pnas.org/content/pnas/suppl/2017/10/11/1710465114.DCSupplemental/pnas.1710465114.sapp.pdf

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The opportunity: forests and farms as natural climate solutions

Natural Climate Solutions (NCS) are actions that aim to increase carbon storage and avoid greenhouse gas emissions through the conservation and restoration of forests, agricultural land, grasslands and wetlands.



Forests

- Improved forest management
- Reduced timber harvesting
- Reforestation
- Forest protection
- Avoided fuelwood harvesting



Ag and Grasslands

- Nutrient management
- Regenerative agriculture
- Avoided grassland conversion
- Agroforestry
- Improved animal management



Wetlands

- Coastal wetland restoration
- Coastal wetland protection
- Peatland restoration
- Peatland protection

The information above was adapted from: <u>http://naturalclimatesolutions.org/</u> For illustrative purposes only

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Drivers of timberland and agriculture investments

Positive outlook supported by solid fundamentals and augmented by new tiers of demand

Timber tailwinds

- COVID-motivated shift to "work from home" model boosts demand for expanded/reconfigured living-space, particularly in the U.S., resulting in rising demand for lumber, wood panels and timber
- Record wood product prices, boosting profitability for producers of building products and triggering investments in expanded mill capacity
- Efforts to reduce greenhouse gas emissions favor new wood-based building systems for multi-story construction
- Strong fundamentals for U.S. housing based on demographics and deficient stock of housing

Agriculture tailwinds

- Overall demand for food products remained resilient during COVID, eying for growth post-COVID
- Normalized trade relations further boost demand
- Global GDP per capita and per capita income to regain forward momentum, driving improved and more sophisticated diets
- Arable land is finite and suitable water increasingly scarce; sustainable agricultural management provides additional incentives for investors
- Reduced agricultural greenhouse gas emissions and more efficient use of limited resources (energy, land, water) by deployment of ag tech, genetics and improved crop management

Agriculture headwinds

- Crop prices remain sensitive to international trade relationships, amid capricious geopolitical climate
- Weather and climate events cast uncertainties on production

Timber headwinds

- Inflation and interest rates dampening consumer confidence and ability to pay
- Large inventory of saw log timber in U.S. South



Michael Strzelecki, CFA Managing Director, Business Development, Senior Timberland Portfolio Manager

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Notes

Sources

Slide 5 Sources: Data for Timberland refer to the NCREIF Timberland Index as of 12/31/21. Data for Farmland refer to the NCREIF Farmland Index as of 12/31/21. Data for Commercial Real Estate refer to the NCREIF Property Index as of 12/31/21. Data for Small Cap Equities refer to the Ibbotson series IA SBBI U.S. Small Stock TR USS as of 12/31/21. Data for Non U.S. Equities refer to the MSCI/EAFE International Equities Index as of 12/31/21. Data for Corporate Bonds refer to the Ibbotson series IA SBBI U.S. LT Corp TR US\$ as of 12/31/21. Data for U.S. Treasury Bills refer to the Ibbotson series IA SBBI U.S. LT Corp TR US\$ as of 12/31/21. Data for U.S. Treasury Bills refer to the Ibbotson series IA SBBI U.S. as of 12/31/21. Data for U.S. Treasury Bills refer to the U.S. Bureau of Labor Statistics as of 12/31/21. The S&P 500 series is from Standard & Poor's Financial Services LLC as of 12/31/21. Data for U.S. Private Equity refers to the Cambridge Associates Private Equity Index as of 12/31/21. Data for U.S. Forest Products refer to the S&P Composite 1500 Paper and Forest Products series as of 12/31/21.

Slide 6 Sources: Data for Timberland refer to the NCREIF Timberland Index as of 12/31/21. Data for Farmland refer to the NCREIF Farmland Index as of 12/31/21. Data for Commercial Real Estate refer to the NCREIF Property Index as of 12/31/21. Data for Small Cap Equities refer to the Ibbotson series IA SBBI U.S. Small Stock TR US\$ as of 12/31/21. Data for Non U.S. Equities refer to the MSCI/EAFE International Equities Index as of 12/31/21. Data for Corporate Bonds refer to the Ibbotson series IA SBBI U.S. LT Corp TR US\$ as of 12/31/21. Data for U.S. Treasury Bills refer to the Ibbotson series IA SBBI U.S. as of 12/31/21. Data for U.S. Treasury Bills refer to the Ibbotson series IA SBBI U.S. as of 12/31/21. Data for U.S. Treasury Bills refer to the Ibbotson series IA SBBI U.S. as of 12/31/21. Data for U.S. Treasury Bills refer to the U.S. Bureau of Labor Statistics as of 12/31/21. The S&P 500 series is from Standard & Poor's Financial Services LLC as of 12/31/21.

Slide 8 Sources: Data for Timberland refer to the NCREIF Timberland Index. Data for Farmland refer to the NCREIF Farmland Index. Data for 10-Year Treasury refer to Macrobond as of 12/31/21. All data as of December 31, 2021. Past returns are not a guarantee of future results; potential for profit as well as for loss exists

Benchmark definition

The NCREIF Timberland benchmark is the National Council of Real Estate Investment Fiduciaries' Timberland Property Index which is published quarterly at www.ncreif.org. The NCREIF Timberland Property Index is comprised of U.S. domestic timberland investments held in a fiduciary investment environment. Returns are reported on a non-leveraged basis. After the year in which the property was purchased, the value of the property must be assessed at least quarterly (internally or externally), and at least once every three years by an independent, external appraiser. This 'marked to market' value is the value used to calculate the appreciation return component reported to NCREIF. A change in value from one quarter to another can be for one of several reasons: The property was externally appraised by an independent third party appraiser. Observed changes in market conditions as so determined by the manager to recognize any changes during the quarter in rental rates, capitalization rates, interest rates, a partial sale, capital expenditures, or changes in discount rates. All properties owned by the underlying investment vehicles of the Total Timberland Composite that meet the eligibility requirements of the NCREIF Timberland Property Index are included in the overall results of the NCREIF Timberland Property Index. The Index represents investment returns from a single class of investor. As such, the Timberland Index may not be representative of the timberland investment market as a whole.

The NCREIF Farmland benchmark is the National Council of Real Estate Investment Fiduciaries' Farmland Property Index which is published quarterly at www.ncreif.org. The NCREIF Farmland Property Index is comprised of U.S. domestic farmland investments held in a fiduciary investment environment. Returns are reported on a non-leveraged basis. The Index is set at 100 starting fourth quarter of 1990. Calculations are based on quarterly returns of individual properties before the deduction of portfolio-level asset or investment management fees, but inclusive of property level management fees. Each property's return is weighted by its market value (value-weighted). Index values are calculated for income, appreciation and total. Observed changes in market conditions as so determined by the manager to recognize any changes during the quarter in rental rates, capitalization rates, interest rates, a partial sale, unexpected capital expenditures, or changes in discount rates. A property value may be adjusted only for capital expenditures made during the quarter - effectively, an accounting adjustment to reflect the amount of the capital expenditure. The value submitted can be the previous quarter's value because, in the judgment of the manager/owner, the property's value did not change during the period. All properties owned by the underlying investment vehicles of the Total Farmland Composite that meet the eligibility requirements of the NCREIF Farmland Property Index are included in the overall results of the NCREIF Farmland Property Index. The Index represents investment returns from a single class of investor. As such, the Farmland Index may not be representative of the agricultural investment market as a whole.

Investment Considerations

A widespread health crisis such as a global pandemic could cause substantial market volatility, exchange-trading suspensions and closures, and affect portfolio performance. For example, the novel coronavirus disease (COVID-19) has resulted in significant disruptions to global business activity. The impact of a health crisis and other epidemics and pandemics that may arise in the future, could affect the global economy in ways that cannot necessarily be foreseen at the present time. A health crisis may exacerbate other pre-existing political, social and economic risks. Any such impact could adversely affect the portfolio's performance, resulting in losses to your investment.

Any performance information shown is the investment strategy composite gross of fees, including advisory and investment management fees and other expenses an investor would incur, but net of transaction costs, unless otherwise noted; deduction of such expenses would reduce returns. Net performance results reflect the application of the highest incremental rate of the standard investment advisory or management fee schedule to gross performance results, unless otherwise indicated. Changes in exchange rates may have an adverse effect. Actual fees may vary depending on, among other things, the applicable fee schedule, portfolio size and/or investment management agreement. For example, if \$100.000 were invested and experienced a 10% annual return compounded monthly for 10 years, its ending value, without giving effect to the deduction of advisory or investment management fees, would be \$270,704 with an annualized compounded return of 10.47%. If an advisory or investment management fee of 0.95% of the average market value of the account were deducted monthly for the 10-year period, the annualized compounded return would be 9.43% and the ending dollar value would be \$246,355. Unless otherwise noted, returns greater than 1 year are annualized; calendar year returns for each one year period end in December. Discrepancies may occur due to rounding. Past performance does not guarantee future results.

Performance information shown is generally for discretionary strategies/solutions and managed by a Manulife entity which is GIPS compliant and falls under the definition of a corresponding Manulife GIPS firm. Some investment strategies/solutions may not be included in a GIPS compliant firm under certain circumstances, such as SMA/UMA business in Canada.

Any characteristics, guidelines, constraints, or other information provided for this material was selected by the firm as representative of the investment strategy and is provided for illustrative purpose only, may change at any time, and may differ for a specific account. Each client account is individually managed; actual holdings will vary for each client and there is no guarantee that a particular client's account will have the same characteristics as described herein. Any information about the holdings, asset allocation, or sector diversification is historical and is not an indication of future performance or any future portfolio composition, which will vary. Portfolio holdings are representative of the strategy, are subject to change at any time, are not a recommendation to buy or sell a security, and do not represent all of the securities purchased, sold or recommended for the portfolio. It should not be assumed that an investment in these securities was or will be profitable. Top ten holdings information combines share listings from the same issuer, and related depositary receipts, into a singular holding to accurately present aggregate economic interest in the referenced company.

No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment.

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