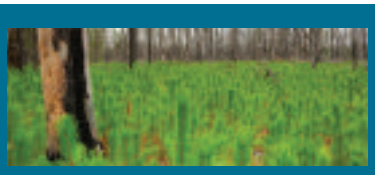
GROWING IDEA
Investors begin to think holistically



MONEY TREES
Carbon credits to add to forestry returns?

BACK TO LIFE
The role of investors in regenerative farming

PLUS: TOP 40 MANAGERS
TOP 50 INVESTORS
CASE STUDIES

NATURAL CAPITAL

ASSET CLASS SPECIAL REPORT

Dalmally forest in Scotland, acquired in December 2024 by specialist investment firm Blackfinch Group

COVER STORY

Holistic natural-capital strategies, built on a bedrock of sustainable forestry and agriculture, are taking shape. Florence Chong reports

ASSET CLASS FORMATION

The top 50 largest institutional investors in natural capital own some €70.6bn in assets in aggregate (see page 54 for the full ranking), up from €63.7bn at the start of 2024. Natural capital makes up just over 1% of their total assets, suggesting ample room for growth.

Growing attendance by institutional investors at natural capital-focused conferences, including the IPE Real Assets Infrastructure & Natural Capital annual gathering in September, is another indicator of the growth potential of asset the class.

Tom Sarno, global head of timberland investments at Manulife Investment Management, says this interest was clear at a recent UK conference it held in collaboration with Cambridge University. "That was a demonstration of what we forecast a couple of years ago – that genuine interest in natural capital from investors was coming," he says.

Sarno identifies three distinct sets of investors prepared to allocate to natural capital. "One group is investors wanting to invest in core timberland. The second, wants the same core timberland thesis but with some of the additional attributes. And the third looks for impact – not for philanthropy but for the value created, such as carbon, mitigation banking and other ecosystem services," he says.

At the heart of natural capital is timberland and agriculture, both of which have been an investment asset class for the past four decades, but more recently have morphed into a broader definition of natural capital. It is an all-embracing term for land-based investments covering timberland, agriculture, and ecosystem services such as biodiversity restoration and carbon sequestration.

Gresham House managing director Olly Hughes says: "For us, the philosophy of natural capital is, first, to produce sustainable natural resources – which is what we are doing through forestry or agriculture – and second, to produce carbon to offset and mitigate climate change and to utilise the transition to net zero using sustainable materials. Third, to restore and protect biodiversity, and fourth, social value and the stewardship of nature that sits on our land."

Hughes says investors are looking for exposure, but the challenge is to create opportunities to invest across the firm's portfolio of natural capital assets. To help in this endeavour, Gresham House recently appointed Eoin McDonald as director of global natural capital to develop and advance the company's natural capital strategy.

Gresham House has been on "journeys" with its clients, looking at natural capital "from a very high level and thinking about finding the real opportunities to deploy capital", says Hughes. "Each client might have different priorities in terms of how they want to allocate to the strategy. They may want to be real asset-oriented, or they may want to be more technology-oriented."

"They [the clients] may want to be real asset-oriented, or they may want to be more technology-oriented"
OLLY HUGHES

He says forestry and agriculture deliver core returns. Gresham House has an ambition to build on its sustainable timberland, agriculture and real estate investment to spin out into what Hughes says is "a pure land-based agriculture play" and to align agriculture with more traditional core timberland.

Martin Davies, Nuveen's global head of natural capital, says: "We need to approach ecosystem services from natural capital assets in an integrated, holistic way. That is, to run a commercial production system based on regenerative agriculture and sustainably managed forestry – and alongside it, protect and improve existing habitat or restore damaged habitat. That is the model in our view."

Davies says natural capital is "less mysterious than it is often perceived to be". Investment managers and owners need to start thinking about the environmental services that can be generated from their land, he suggests.

Investors have a fiduciary duty to deliver returns for their clients, and this will ultimately dictate their asset allocation decisions. But Davies says sustainability and this fiduciary duty can be aligned. Sustainable agriculture and forestry can deliver core returns, while the reduction of synthetic farming methods (such as pesticides), greenhouse gas emissions, and energy and water use can provide economic benefits and have a positive impact on the environment. In time, there will be accretive returns from monetising all ecosystem services, he adds.

According to statistics provided by data firm Preqin, 18 natural capital funds raised a total of US$6.37bn in the first three quarters of 2024 (see table).

AXA IM Alts launched its natural capital strategy two years ago, "initially reserved for AXA Group investors as part of their global commitment of €1.5bn to fight against deforestation and preserve biodiversity", says Alexandre Martin-Min, head of natural capital and impact investments. "It is part of AXA IM Alts' broader strategic plan to further extend its efforts to address climate change and biodiversity loss, and it allocated an additional US$500m (€485m) towards nature restoration and habitat protection globally."

Martin-Min says the updated strategic plans are incorporated into the firm's longstanding presence in sustainable management of brownfield forestry assets, which currently represent around €1bn in assets under management.

"AXA IM Alts' forestry strategy aims to deliver stable long-term returns from sustainably managed timber revenue streams on behalf of our clients. These additional commitments to AXA IM Alts' natural capital strategy mainly target returns driven from payments for environmental services, including carbon or other nature-based credits, with traditional revenue streams like timber being complimentary," he says.

"Sustainable forestry has a huge role to play in delivering supplies of sustainable fuel, fuel and fibre and has attractive characteristics as an asset class. However, if we are to hit net zero as a global economy, we need bolder changes in land use and private capital allocation to actively restore and protect natural ecosystems."

Davies says: "Managers have a fiduciary duty to maximise the value of a natural capital asset, like a farm. We should maximise the value from all the ecosystem services, but that is easier said than done. How do you monetise water management for flood control or water quality? There is no question that these things have a significant value to society, but who is going to pay for them? That is the challenge."

Annual fundraising volumes

Year	Number of funds	Total raised in US$bn
2024	18	6.37
2023	21	5.59
2022	26	2.84
2021	39	5.45
2020	30	9.92
2019	45	12.7
2018	34	5.6

Source: Preqin

Davies, who has overseen Nuveen's agriculture business which began operations as Westchester in 1986, gives an example. "Water companies in the UK spend a lot of money removing nitrates and phosphates from water," he says. "But if landowners can change management of the watershed and reduce minerals from the source before they get to the water company, there is value there.

"Yet, it is a 'utopian vision' to think that all ecosystem services can be monetised. In time, however, a market for each of these services could evolve, like the global carbon market which is now well-established and growing rapidly. Carbon offset has become a sought-after commodity in the transition to a net-zero economy."

Companies with significant emissions have begun investing in timberland to access carbon credits, Davies says. They know the origin of the carbon credit and they are assured of the quality and the price, and from a reputational perspective, they probably take a great deal of comfort knowing the source of the carbon credit, he says.

"We forecast a couple of years ago – that genuine interest in natural capital from investors was coming"
TOM SARNO

Monetising ecosystem services

At a much lower level, biodiversity credits are starting to have a market value. But it is still a nascent area.

In the foreseeable future, landowners may receive payments for managing or conserving certain plant species or habitats for a certain creature on their land. In some instances, conservation organisations are already willing to pay landowners to manage a forest or farmland in a certain way, through conservation easements which can protect and enhance habitat, says Davies.

"There are a lot of services that have a value but as yet today we cannot monetise these," he says. "Over the course of time, as demand for some of these ecosystem services evolves, landowners have a responsibility in some ways to make the market, by connecting with business and industry where there is a demand. Then, some of these components will be able to generate additional income streams."

Within Manulife IM's 5.5m acres of timberland, there are 17,000 miles of riparian buffers – vegetated areas that protect streams. Sarno says: "It is a big number and numbers are important but equally important is why those numbers matter so much. It is because these special riparian managed zones have very rich species of diversity and the web of life that is created. Further, about 23% of forests have special conservation designations. We protect the unique attributes in these areas, and they are third-party audited."

Manulife IM, which manages more than US$16bn in natural capital assets, is generating revenue from some of these ecosystem services.

Sarno cites the example of a gopher tortoise project in Florida. This species originated in North America 60m years ago. Gopher tortoises are essential to a web of life, supporting some 350 species relying on their presence to survive. "We have created a mitigation bank to keep this keystone species intact. We have a conservation bank where we sell credits in exchange for accepting tortoises from other land users to provide additional cash benefits to our investors," Sarno says.

Manulife IM also sold a corridor of an aquatic ecosystem to the state of South Carolina which recently bought the land to preserve the wetland environment, provide resilience to flooding and to protect a historic site.

"You can see that value can be created through ecosystem services by maintaining the forest in its existing ownership or by transferring ownership to someone who has particular needs of the ecosystem," Sarno says.

"We are moving from optionality to value crystallisation. We are seeing this in carbon, recreation, mitigation banking, and there are other services too. If you look back 10 years, these did not exist. Now, they are real. And this is the promise of natural capital. You have these little pockets. I think it is certainly something that will start to become more mainstream, but we have to give it more time to grow and develop."

Historically, it has not been possible to extract value from ecosystem services like flood prevention, water recycling or pollination, although

HOLISTIC STRATEGIES

Manulife IM and Nuveen are exploring ways to place values on them.

Nuveen has conducted pilots to establish natural capital balance sheets on a cross-section of assets managed globally and has developed accounting methodologies for ecosystem services (see Natural capital balance sheets).

Nuveen manages US$13.7bn of assets covering 3m acres in 11 countries. Davies says that if all ecosystem services could be measured, the theoretical value would be significantly more than the financial value of an asset. "And that is how a land manager, or owner, needs to think about their assets today," he says.

Eric Cooperstrom, managing director of impact investing and natural capital solutions at Manulife IM, says: "We are seeing the beginning of a biodiversity credit market. There have been numerous protocols and pilot programmes that have emerged in the past few years. Ultimately, what underpins the evolution and success of these emerging biodiversity markets is how we can reliably and consistently track the data."

Manulife recently formed a partnership with Restor, an open-data geospatial platform that provides tools for natural capital asset managers to analyse timberland through remote sensing technology to measure and monitor key biodiversity metrics in addition to water, carbon and forest cover changes.

"It is part of AXA IM Alts' broader strategic plan to further extend its efforts to address climate change and biodiversity loss"

ALEXANDRE MARTIN-MIN

"Getting that data is the first step towards monetising biodiversity benefits," says Cooperstrom. "The next step is to pilot natural-capital accounting to put a monetary value on the biodiversity benefits from soil, water, air and community benefits."

Ultimately, Cooperstrom hopes to be able to apply a dollar figure to previously unmonetised ecosystem services to help build the underpinnings of a functioning biodiversity market.

He says new technologies like 'environmental DNA' should make it possible to take water samples and carry out biodiversity screening to detect the prevalence of certain species. Bioacoustics can identify local fauna in the forests.

Davies says monetising supporting and regulating ecosystem services can add up to 250bps to the returns over and above those generated from provisioning ecosystem services. These accretive returns will enhance revenue generated from the commercial use of the land whether through timber production or agriculture.

NCBS: taking a balanced approach

Nuveen is undertaking pilot projects to establish natural capital balance sheets

The true value of natural capital could well be four times that of the land itself, according to pilot projects undertaken by Nuveen Natural Capital to establish natural capital balance sheets (NCBS).

Nuveen began three years ago to account for non-timber assets in farmland and timberland it owned in Brazil and the US, respectively. Its latest sustainability report features a third pilot for a forest property in the US Pacific Northwest, covering 30,276 acres.

The key takeaway from the latest pilot is that the estimated gross value that ecosystem services provide to wider society is four times the value provided to private landowners. "By accounting for a wider range of ecosystem benefits that our natural assets deliver, we can better analyse the true impact that different practices have on natural capital values and seek to improve land management," says the report.

The private value is derived mainly from timber production. Values for recreation are small but only reflect benefits that are currently able to be captured and monetised. Of the ecosystem services, only carbon sequestration can be qualified because there is a thriving market for carbon credits.

Nuveen does not yet have the methodologies to measure the material benefits of biodiversity, but over time it hopes to identify a way to put monetary estimates on ecosystem services, such as riparian habitats.

In the latest Nuveen pilot, riparian habitat covers more than 3% of the total property site, including land adjacent to water courses, which act as a buffer zone by helping to regulate water supply and quality, protect soil quality and reduce flood risk on the property.

Nuveen believes that ecosystem services are undervalued

While these are undoubtedly valuable services to nature, the environment and ultimately society, "the materiality assessment" of such ecosystem services provided by the forest cannot be assessed. Based on what it is able to account for today, Nuveen finds that financial resources committed to maintaining the Pacific Northwest forest asset represent about 9% of the value of ecosystem benefits.

For the 2023 reporting year, Nuveen's NCBS on the forest shows a gross asset value of US$12.8m (€12.4m) and a value to society of US$48.1m. It has used present value and calculated over 25 years for the timberland property to get to the values. Carbon sequestration accounted for US$47.8m, and the value of air quality accounted for US$400,000.

Although biodiversity, water quality, soil quality, flood risk management and carbon embedded in timber products all offer material values to society, Nuveen says they remain non-monetised because, at present, there are no methodologies to assess their asset values.

Liabilities on the balance sheet include natural capital production costs (US$4.3m) natural capital maintenance costs (US$1m) and buffer maintenance costs (US$200,000). These total US$5.4m.

Nuveen's environmental economist, Brendan Freeman, says the methodology used to develop the NCBS for the Pacific Northwest property is unique to the asset. And while there is overlap between the NCBSs for the two earlier projects, the NCBS of each asset can differ depending on the local landscape, he says.

Investing in Biodiversity

Markets to finance the protection, restoration and sustainable management of nature offer natural capital investors opportunities to improve biodiversity and generate a positive financial return

Unprecedented global action to address the decline in nature and its causes is underway, and investments in biodiversity will be a critical part of these efforts. The global rate of species extinction is unlike anything the world has seen since the time of the dinosaurs – today, one million plant and animal species are threatened with extinction, many within decades. Because over half of the world's economy is dependent on nature, these losses threaten the wellbeing and livelihoods of people all over the world.

Human activity is the primary cause of biodiversity loss – land use change is the biggest driver, but other factors such as climate change, pollution and invasive species contribute to biodiversity's dangerous decline. Addressing this global challenge will require changes in the way we value biodiversity and manage land and will require new private investment along with supporting policies that encourage private landowners and land managers to take action.

Market-based approaches designed to incentivize the protection, improved management and restoration of nature can both expand the reach of policy to private landowners and encourage investment that helps achieve biodiversity conservation targets. Environmental markets put a price on protecting and restoring nature, creating incentives to facilitate private capital into investments that improve, not diminish, biodiversity. And with the right incentives in place, protecting, improving and restoring ecosystems for biodiversity can become a source of return for landowners and not another cost of doing business. Here we highlight several existing and developing market-based pathways for land-based investments to positively impact biodiversity.

Select market frameworks to support biodiversity

	Framework	Market Type	Incentive structure	Source of return	Permanence	Protect	Improve/ restore
U.S.	Conservation land sales	Voluntary	Land sale	Payment from public or private sector to landowner for land rights	Varies	+	
	Conservation easements	Voluntary	Partial sale of land rights	Payments from public or private sector to landowner for e.g. development rights	Perpetuity	+	
	Conservation Reserve Program	Voluntary	Incentive payment	Payments to landowner from federal or state agencies to remove environmentally important land from production and establish native species for conservation	10-15 years	+	+
	Mitigation bank credits	Compliance	Tradable certificates	Public or private developer of project impacting wetlands, streams or habitat purchase credits from mitigation bank owner to compensate for unavoidable impacts	Perpetuity		+
Global	Carbon credits + biodiversity co-benefits	Voluntary	Tradable certificates	Payments for nature based carbon credits for measurable and independently verified emissions reductions and removals plus certified biodiversity co-benefits	40 years	+	+
	Biodiversity credits	Voluntary	Tradable certificates	Payments for credits to landowner for actions that result in measurable and scientifically verified biodiversity outcomes (private and public sector programs in development)	Varies	+	+

U.S. market frameworks

Conservation land sales and easements

Conservation land sales and easements are two mechanisms for public or private sector actors to protect biodiversity and other environmental values on private land through the acquisition of full or partial property rights. A conservation land sale conveys full property rights from the seller to the buyer, and the mechanics of the transaction are not unlike typical private land sales. A conservation easement is a voluntary legal agreement that permanently limits development to protect conservation values. For timberland owners, conservation easement sales can be a way to generate revenue and protect biodiversity while maintaining land ownership and ongoing forest management. For example, a "working forest" conservation easement allows forestry operations and harvesting to continue while prohibiting land development or land use conversion.

Conservation Reserve Program

The Conservation Reserve Program (CRP) is one of the largest private land conservation programs in the U.S., with more than 24.8 million acres enrolled in 2023. This USDA-funded program targets farmland owners of productive cropland where conservation or restoration practices can be implemented on environmentally sensitive land to protect wildlife habitat, improve water quality or conserve soil resources, for example. In exchange for these management changes, program participants receive annual rental payments, partial reimbursement for costs or incentive payments. The contract period for land enrolled in the program is typically 10-15 years.

Mitigation bank credit markets

A mitigation bank is an area of wetlands, stream or habitat that has been enhanced or restored to balance unavoidable impacts from development. This market-based system of credits and debits has developed and grown over the past 30 years, ensuring that there is no net loss of these ecologically important, federally protected areas within the system. The compliance credit market is overseen by state and federal regulatory agencies, which approve mitigation bank projects that earn credits as well as assess unavoidable impacts from development that incur debts. Credits are traded within ecologically defined markets and are performance-based. Buyers of credits typically include public or private developers of infrastructure, industrial, energy, commercial or residential projects.

Carbon market frameworks

Though global voluntary carbon credit markets are designed to primarily support climate action, nature-based projects – approaches that increase carbon sequestration and storage in plants and soil – provide a multitude of co-benefits. Nature-based carbon projects that restore native vegetation, protect wildlife habitat and improve water quality all in addition to sequestering and storing carbon directly benefit biodiversity. Recognizing this potential, carbon credit registries have certifications for projects that demonstrate tangible biodiversity benefits in addition to climate benefits.

For example, projects registered under Verra's Verified Carbon Standard (VCS) can be certified in conjunction with the Climate, Community and Biodiversity Standard (CCB). The CCB Standard positively identifies land management projects that deliver net positive benefits for climate change mitigation, local communities and biodiversity. Additionally, several carbon registries also have mechanisms to recognize projects with U.N. Sustainable Development Goals (SDGs) linked biodiversity benefits.

Developing biodiversity credit markets

Biodiversity crediting frameworks are another market-based approach to incentivize investment in nature. Incentives are created through payments for credits from projects that result in measurable and scientifically verified positive outcomes for biodiversity (e.g. species, ecosystems, natural habitats). Interest in this type of nature-focused crediting framework has risen in recent years, in part because of the growth of the voluntary carbon market.

Several independent and government-led biodiversity crediting frameworks are in early stages of design and development, but still face challenges. The future success of biodiversity crediting frameworks currently in development will require advancements on all sides, including:

- Establishing common principles and standards for credits and methods for quantifying benefits;
- Building a robust pipeline of projects and high-integrity supply of credits; and
- Developing viable sources of demand.

What does this mean for investors?

Nearly half of today's institutional investors are investing in timberland and farmland seeking positive environmental impact. And we know that investments in land-based assets can generate quantifiable biodiversity benefits – e.g., by protecting conservation set-asides, improving management practices and actively restoring ecosystem structure and function. For investors seeking to direct capital toward strategies that benefit biodiversity, there are a multitude of opportunities to access well-developed existing and emerging environmental markets.

To learn more visit: nuveen.com/naturalcapital

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CARBON CREDITS

Meta has invested with BTG Pactual TIG to deliver 1.3 million carbon credits

Company credit

Forestry investment managers are increasingly juggling corporates' carbon offsetting requirements with the objectives of institutional investors. Florence Chong reports

Corporate investors, led by tech giants, have joined other heavy emitters, including oil majors, to put money in the tree-and-land sector as part of their strategy to derisk their carbon footprints and future liabilities.

The use of carbon credits to offset carbon emissions has been the subject of some criticism, but in 2024 Meta and Microsoft signed contracts with BTG Pactual Timberland Investment Group (TIG) to provide more than 10m tonnes of nature-based carbon-removal credits from its forests.

Mark Rogers, chief executive of New Forests, says: "The critical thing for corporate investors is to build a carbon bank, so they understand how the global carbon markets – whether regulated or voluntary – work. The carbon markets are complex. They have as many as 50 different methodologies. It is complex. All we need is four or five, not 50 methodologies."

Rogers sees corporate investment in forestry as a way of diversifying balance sheets. Corporates understand that a carbon liability is looming, which they will need to cover off. Those already in the market have chosen to get in early, he says.

Investment in carbon is, to a varying degree, a corporate derisking strategy, says Rogers, adding, however, that it is not as simple as saying it is a financial risk. Some companies are looking to the future as new generations of climate-aware consumers emerge. Apple, for example, has flagged a future with carbon-free or carbon-neutral iPhones.

Recently, New Forests hosted a group of Japanese bankers on a fact-finding field trip to its forest plantations in New Zealand. It is part of the Japanese banks' 'save the planet' initiative.

"They were trying to get a better understanding of where the investment universe will shift as we continue to narrow down carbon solutions and as the nature repair market evolves to be a substantial economic force," Rogers says. "They are trying to understand how and where they will play a role in that natural capital space."

He adds that the banks have many corporate clients who have questions around decarbonisation, offsets and nature repair.

BTG Pactual TIG has undertaken to supply Microsoft with up to 8m nature-based carbon removal credits through to 2043, while Meta has invested with BTG Pactual TIG to deliver 1.3m carbon credits – with options for delivery of an additional 2.6m credits through to 2038.

"The critical thing for corporate investors is to build a carbon bank, so they understand how the global carbon markets work"

MARK ROGERS

Mark Wishnie, BTG Pactual TIG's chief sustainability officer, says: "Meta and Microsoft are relying on the delivery of these carbon credits. They need to feel confident that their counterparties can deliver." He declines to comment on the size of the investments, except to say the credits will be delivered from BTG Pactual TIG's US$1bn (€.97bn) reforestation and restoration strategy in Latin America.

While he does not presume to speak on behalf of the large carbon buyers, Wishnie's impression is that corporate investors seek to acquire carbon credits from forestry managers to ascertain the source and quality of the credits. "They want those credits to come from forests which are delivering real benefits to the environment and the local community."

The commitments from Meta and Microsoft now underpin BGT Pactual TIG's reforestation and restoration strategy in Latin America. Virginia-based non-profit Conservational International is acting as BGT Pactual's impact adviser to ensure the strategy enhances biodiversity and supports inclusive and equitable community development.

"We launched the strategy in 2021 and cumulatively we have crossed a milestone – we have mobilised US$500m and we are now halfway to our target," Wishnie says. The vehicle is aiming to restore approximately 133,000 hectares of natural forest while establishing sustainable commercial tree farms of another 133,000 hectares on deforested landscapes.

Before Meta and Microsoft, Apple was already an investor in BTG Pactual TIG's Latin American Forest Restoration Fund through a special investment vehicle known as The Restore Fund. Launched in 2021 with up to US$200m in commitments with Conservation International and Goldman Sachs, The Restore Fund is managed by BGT Pactual TIG and two other firms, Symbiosis and Arbaro Advisors.

The Restore Fund is looking to Arbaro Advisors to build a portfolio of forestry projects across Latin America to develop sustainably managed eucalyptus farms. The social aspect of its investment is to strengthen the livelihood of the local communities and to protect natural ecosystems in the project areas. Symbiosis is developing native seedlings to grow working forests of native tropical hardwoods and to protect natural forests in Brazil's Atlantic Forest.

In 2023, Apple expanded the fund with an additional US$200m commitment. This mandate went to the London-based Climate Asset Management. As with its earlier mandate, Apple aims to remove 1m tonnes of carbon dioxide per year at its peak with the portfolio. It also expects the investment to generate a financial return.

Apple has since brought in two suppliers – Taiwan Semiconductor Manufacturing Company (TSMC), the world's largest chipmaker, and Japan's Murata Manufacturing – to co-invest with the second phase of The Restore Fund, managed by Climate Asset Management. TSMC and Murata have committed up to US$50m and US$30m, respectively, bringing the total equity to US$280m. Meanwhile, Apple is having ongoing conversations

with forestry managers in other parts of the world to expand the role of the fund.

Martin Berg, chief executive of Climate Asset Management, says: "Corporate investors sign up essentially to help meet their net-zero targets. Often, we find their needs are different – some are looking for carbon credits by 2035, others by 2040 – and we work collaboratively to create forward-looking carbon programmes.

"These investors want to purchase high-quality carbon offsets. They want to know the source of those credits. And by investing directly with forest managers in specific projects they are able to follow the development of the forests from when planting begins."

Berg adds: "As managers, we help them source the assets to generate the offsets. We create a pool of carbon buyers that are agreed on the same criteria to purchase the credit."

Climate Asset Management has also brought corporate investors into its Nature Based Carbon Fund. "We have 13 investors, including GSK, the global pharmaceutical firm, energy firm Tokyo Gas and Carrier Global [a manufacturer of air conditioners] in our carbon fund."

Enough room for corporates and investors? Large Japanese corporates have been active. Industrial conglomerate Sumitomo Corporation has a 15-year, closed-ended forestry fund with US$420m raised from 10 Japanese companies, including various arms of the Sumitomo Group, Japan Post Holdings, Nippon Yusen, Tokyo Century Corporation, Osaka Gas and ENEOS Corporation. Launched in 2023, the fund invests in decarbonisation and biodiversity conservation projects through Eastwood Forests, a US-based forestry asset management company. The aim is to build a portfolio of 130,000 hectares of forestry, mainly in North America by 2027.

Mitsui and Nomura took a step further in 2022 by becoming the majority owners of Sydney-based New Forests, one of the world's largest forestry managers. Mitsui has been an investor in New Forests since 2016 and just over two years ago Mitsui and New Forests jointly established a A$50m carbon-credit platform, with 1m trees planted across 1,000 hectares of land in Tasmania. Mitsui sees the fund as a way of helping it reach net-zero emissions by 2050.

One of New Forests' early investors is French energy company TotalEnergies, which has invested US$50m in the manager's Tropical Asia Forest Fund 2 (TAFF2). The fund invests in certified plantations and native forest conservation projects in Southeast Asia.

A company spokesperson says TotalEnergies established a nature-based solutions unit in June 2019 and has allocated US$100m annually for these projects. In 2023, it committed more than US$100m over 15 years to the projects of the Nature Based Carbon fund managed by Climate Asset Management. In 2023, TotalEnergies invested US$100m in a forest-based carbon project with Anew Climate, and US forestry-focused carbon removal platform Aurora Sustainable Lands. The money will be used in forestry operations to preserve carbon sinks and to help the French company achieve its climate goals.

The French energy group also has a joint project with Campagnie des Bois du Gabon to develop sustainable forestry management in Gabon.

Lisa Jackson, Apple's vice president of environment, policy and social initiatives sets out the firm's 2030 carbon-neutral plans


Mark Wishnie: "corporate investors want carbon credits to come from forests which are delivering real benefits to the environment and the local community"

The spokesperson says: "The joint project in Gabon is designed to foster a forest management model that will make it possible to develop a new balance between the harvesting and local processing of sustainable wood, combined with carbon storage and the production of related carbon credits. We want to achieve this through reduced impact of forest operations, reforestation, agroforestry and conservation of natural forests."

TotalEnergies says it is paying close attention to the emissions reductions and sequestration achieved by its investments. "At the end of 2023, our stock of carbon credits stood at just under 11m, out of which almost all are voluntary credits," the spokesperson says. "The cumulative budget pledged for these campaigns amounts to nearly US$725m over their cumulated lifespan. They are expected to deliver total accumulated credits of 44m and 71m in 2030 and 2050, respectively.

"The final tally of credits obtained will be determined once the projects have been completed. If such a stock of 44m credits is built up in 2030 and based on a consumption of 10% of the stock per year from 2030, then TotalEnergies would use around 5m credits per year from 2030 onwards."

UK oil and gas company BP has owned a majority stake in the largest US forest carbon offset developer, Finite Carbon, since 2020. Finite Carbon identifies and develops projects that enable landowners to generate revenue from the protection, restoration and sustainable management of forests to increase carbon stored in forests and to generate carbon offsets that are verified against industry-recognised standards and can be traded on markets.

Shell, another UK oil and gas company, has ongoing forestry regeneration projects which began in 2019 in the Netherlands and Spain under a US$300m programme. It plans to reach net-zero emissions by 2050 and will have to offset 120m tonnes of carbon dioxide by planting forests from afforestation and reforestation. Shell is understood to be in constant discussions with forestry managers to increase investment in forestry.

Some managers have expressed concerns that some corporate investments may lead to forests being "locked up" just to supply carbon credits. This would be a negative for the timberland industry, an increasingly important fibre source of carbon-neutral and carbon-positive products.

However, managers working with corporate investors say they run dual-track strategies that would still make trees available for logging. BGT Pactual TIG runs a combined strategy of conservation and commercial operations. Areas allocated to conservation will be restored to their natural state and protected permanently.

Wishnie says: "We will also have commercial tree farms where we will be planting trees essentially for harvesting. So long as we replant and maintain the tree farms, the stock of carbon is maintained over time."

Manulife Investment Management in 2022


Eric Cooperström says Manulife IM is scaling up its carbon projects portfolio to support investors' climate goals with its forest climate strategy


Trees planted in Zhangwu County of Fuxin City, China

CARBON CREDITS

launched a Forest Climate Fund which closed in December 2024 with US$480m in commitments. Around 70% of the capital is being directed to carbon projects.

Eric Cooperström, managing director, impact investing and natural capital solutions, says Manulife IM is scaling up its carbon projects portfolio to support investors' climate goals. The forest climate strategy has attracted a wider pool of investors than its traditional institutional base. Cooperström sees the potential to attract operating companies – rather than their pension schemes – which require durable high-quality carbon credits.

Rogers says that, ideally, corporates should invest with managers and take the carbon offtakes rather than investing directly into land and trees. The manager has sold US$250m in carbon credits to the California carbon market over the past 10 years, and newer assets in the US are poised to receive accreditation to trade in carbon credits.

Despite the arrival of corporate investors, however, the main source of allocation to natural capital still comes from pension funds or sovereign wealth funds and financial institutions. Of the almost A$12bn of assets managed by New Forests, 90-95% of the capital is derived from traditional institutional investors, Rogers says.

"Corporate investors' needs are different – some are looking for carbon credits by 2035, others by 2040"
MARTIN BERG

Olive oil production by Innoliva Group, a business sold by Cibus Capital in late 2023

Crops to carbon

Agriculture specialist Cibus Capital is contemplating a move into carbon credits. Florence Chong speaks to Damon Petrie

While its focus remains grounded on agriculture in pursuit of the future of food, London-based Cibus Capital is considering venturing into the world of carbon credits, initially in Australia before venturing into other geographies.

Carbon credit strategies are structured to use unproductive land to generate carbon credits for growing demand from both corporate and institutional investors looking for nature-based solutions to climate change.

Damon Petrie, consultant investment director at Cibus, says: "Australia is of interest to many firms considering a carbon fund because of its government-sponsored carbon credit market, through what are known as Australian Carbon Credit Units [ACCUs]."

The Australian market has started to see the convergence of regulatory and voluntary carbon markets. ACCUs were introduced in 2011, issued and administered by the Clean Energy Regulator (CER). CER has launched a certificate registry, which it describes as a "modern, easy-to-use system that will allow account holders to manage and trade the units and certificates".

In the 12 months to March 2024, 13.4m carbon credits were delivered to CER, generating investment of more than A$165m (€99m) in carbon projects.

Damon Petrie: "Australia is of interest to many firms considering a carbon fund because of its government-sponsored carbon credit market"

The Australian government runs a second scheme, the Emissions Reduction Fund (ERF), established primarily to buy carbon credits to offset its own emissions. This fund has a budget of A$2.25bn and has contracted more than 190 tonnes of abatement. Another scheme, Safeguard Mechanism, ensures that the country's largest industrial plants reduce greenhouse gas emissions.

Aside from government backing, Petrie says the land title system in Australia protects ownership, especially when it comes to long-dated carbon projects. "Land chosen for carbon sequestration projects is not viable for crops or timber, whether it be softwood or timber rotation," he says. The unproductive land is more suitable for mixed-species bio-planting and the generation of carbon and the biodiversity benefits that come with it.

"Mixed species planting is favoured because, unlike pine trees, grass and other vegetation can grow among the trees," Petrie says. "Optimal management of forests means not locking them up; they still need to be managed for fire mitigation and to control undergrowth. Once trees are three to four metres high, there is an opportunity for farmers to have their cattle graze on grass in these forests."

Cibus has begun risk and viability analysis for a carbon credit project over 18 months and is sounding out investors.

Most investors in carbon sequestration strategies already have investments or assets in Australia that may require carbon credits for their emissions, Petrie says. "This is unusual for a manager like us, as our investors are mainly [limited partners]. There is also rising interest from those who do not need carbon credits now but are thinking ahead for when they will have to mitigate Scope 3 emissions. A small group of LPs is starting to look at carbon credits as an investable asset class."

Petrie says the carbon strategy will be complementary to Cibus's core business.

The firm's venture funds have investments in start-ups, which are developing monitoring and recording of carbon in soil, and are now looking to monitor biomass carbon above ground.

Cibus invests in agriculture and agrifood venture capital and has interests in 23 tech venture companies and nine mid-market companies around the world.

Petrie says one of the Cibus portfolio companies, Withcott Seedlings, is on track to become the largest tree nursery in Australia within the next few years. "Withcott is growing native trees and has quite a number of orders for native species. These trees are being used for carbon and biodiversity plantations, and in some instances, for biofuel. We are seeing strong growth for tree seedlings."

Cibus agri-businesses already produce carbon, but this has not been monetised because it is needed for the health of the soil. "Better stewardship of our land is having a positive impact on our costs, as we can use less water and have more efficient use of fertilisers," he Petrie says.

Carbon credits are also generated by nature easements in Cibus farms, but the firm has chosen to leave the easements to native bees. "We need them for pollination," says Petrie.

BIODIVERSITY

Biodiversity building blocks

Florence Chong explores the early progress being made to create markets for biodiversity units

Decarbonisation is a huge global challenge, but the urgent need for 'nature repair' is arguably an even longer-term issue. Carbon offset schemes should become redundant when carbon emissions are eventually eliminated from the production stream. It might take 100 or 200 years, but there is an end in sight.

For as long as the need to feed and house the world's growing population increases, the destruction of biodiversity continues. Nature repair will be needed in perpetuity.

Biodiversity loss is a complicated problem that cannot be solved by the global community creating an international offset scheme because it is not globally transferable – it is a local problem.

A fledgling market for nature or biodiversity units has been emerging in England since February 2024, when developers were required by law to offset biodiversity loss from their projects. The UK's Environmental Act 2021 stipulates that the real estate industry must obtain biodiversity net gain (BNG) credits in proportion to the scale of any project before local government councils will approve the planning application.

The legislation ushers in the biggest change to England's planning regulations in decades, requiring developers, landowners and others to make a significant contribution to nature's recovery. The goal is to improve the biodiversity of property development by at least 10%.

Property consultant Knight Frank, has analysed 1,300 planning applications submitted to 29 local planning authorities (LPAs) in the first five months of BNG regulation. Patrick Dillon, a senior analyst with Knight Frank's analytics team, found 245 applications had triggered BNG assessments, and a further 97 were identified as needing BNG credits. All told, the Knight Frank analysis found that the applications required 31 BNG units.

"Suppose we were to scale all LPAs in England – that would suggest an annual demand of around 3,100 BNG units," the firm says. "However, this is total requirement and not all developers will turn to off-site or statutory credits. Many will be delivering on-site solutions."

Tapping into this potential market, alternative asset manager Gresham House was quick off the mark, launching a biodiversity strategy, which raised US$380m (€364m) to fund the acquisition of sites for conversion to habitat banks. It became the first asset manager in the UK to offer such a strategy.

Currently, England is the only country in the world with a compliance BNG market. In a joint paper, the World Economic Forum and McKinsey say the current voluntary biodiversity market could grow rapidly, with the potential to reach US$2bn by 2030 and US$69bn by 2050. But early movers are optimistic that, over the next three years, the size of the UK BNG market alone will likely be worth £2bn.

Biodiversity markets are still a developing concept in European countries. The US has long operated what are known as mitigation banks. New Forests, a global land-based asset manager, says the US mitigation banking industry transacts more than US$1.5bn a year.

Australia is poised to introduce a market for what it calls 'nature repair' credits, due to come into force in early 2025. Consultancy firm PwC forecasts that the value of an Australian biodiversity market could be as much as A$137bn (€82bn) by 2050.

But there is reason for caution. The sector is protective of its product and wants to differentiate it from carbon credits.

Peter Bachmann, managing director at Gresham House, says: "We call our product a biodiversity unit and not credit. We don't use the word credit because we want to distance ourselves from the carbon market which has become discredited and damaged substantially by unscrupulous operators."

Bachmann says a voluntary BNG market existed in the UK from 2021 to 2024 because some

BIODIVERSITY

Gresham House began creating habitat banks in 2020, anticipating the fledgling market for nature or biodiversity units that emerged in England in February 2024

nature-conscious local government planning authorities were pre-emptively asking developers to provide BNG units to support their planning applications.

The concept of mandatory biodiversity net gain was introduced to the UK by the Environment Act 2021. However, BNG did not become compulsory until February 2024.

Since 2020, Gresham House began creating a national network of habitat banks and has sold BNG units from these habitat banks to property development and other companies seeking planning permission. The buyers have the same objective – they must comply with requirements under the Environment Act.

"We have created a market," says Bachmann. "We have developed thousands of acres of habitat banks. These are woodlands, grasslands and wetlands on depleted land which has been over-farmed and can no longer support agriculture because there has been too much chemical and pesticide usage or topsoil erosion. We remediate the land to create nature corridors and an environment almost like nature intended for more birds, bees, insects, flora and fauna.

"So far, we have cultivated 4,000 acres. Our plan is ultimately to develop more than 10,000 acres for new habitats to meet the anticipated demand for BNG units. We have BNG demand of around £200m worth of BNG units and transacted north of 50 deals with [companies] like National Grid, [warehouse developer] Panattoni, supermarket chains and water utilities companies."

Bachmann says the firm has researched market potential and, based on development applications lodged with local planning authorities, estimates the total value of biodiversity net gain units required at around £2bn. This will grow every year with more housebuilding and industrial development.

Gresham House offers offsite habitat banks, and this segment of the market could be worth more than £500m per annum, says Bachmann. Gresham House will potentially have a market share of £200m-plus each year.

Bachmann expects more demand for offsite habitat banks. It is a trade-off for developers who are not prepared to sacrifice land on their projects for biodiversity gain. Opting for offsite BNG credits could save developers as much as £50m on some projects, while also having a materially better benefit for nature, he says.

Gresham House is not sacrificing returns for environmental impact. Bachmann says: "Our investors can expect attractive double-digit returns from this strategy because we think, in future, there will be capital gains on our habitat banks."

In July 2024, Principal Asset Management launched its Global Sustainable Food and Biodiversity Fund to capture what it sees as "an underappreciated investment potential" in the companies delivering solutions that can help improve biodiversity and feed the world sustainably.

"Our plan is ultimately to develop more than 10,000 acres for new habitats to meet the anticipated demand for BNG units"

PETER BACHMANN

Martin Frandsen, manager of the new fund, says: "This was based on thorough fundamental research, through which we saw that the demand for food will grow by 56% by 2050, given that the global population will reach 10 billion people. Feeding these 10 billion people cannot be met through the same playbook we have used historically without having a material negative impact on biodiversity.

"Therefore, we need new innovative solutions that can help us create more food with a lower environmental impact. Technology will be key to this, with one example being precision agriculture, which can help farmers become much more efficient."

Frandsen says: "Investors are allocating to biodiversity funds because they are seeing significant value generation and growth potential for companies that are delivering innovative solutions to reduce negative impacts on biodiversity. They also see a material financing gap required to combat the global nature crisis. The combination of the two helps investors target value generation and positive impact at the same time."

Unlike climate, where there is one common bottom line – the reduction of CO_2 – nature is much more complex, and reductions of nature impacts, such as area restored or untouched, have a very different value depending on the location, says Frandsen.

Principal uses the Kunming-Montreal Global Biodiversity Framework – which was adopted by 196 countries at the UN Biodiversity Conference (COP15) in December 2022 – to "target companies that can either have a positive biodiversity impact through their products or solutions, or companies that can have a material positive impact through their business operations or supply chain", Frandsen says. "In the second group, we would like these companies to adopt strategies or policies that can get them closer to net zero nature impact."

AGRICULTURE

Growy vertical farm in the Netherlands: vertical farming reduces the need for large acreage

Back to the future

Institutional investment managers are taking a lead role in the urgent need for regenerative farming. Florence Chong reports

The warnings are stark. The planet may run out of soil to grow food within 50 years. In 2023, between 713 million and 757 million people faced hunger. The number has been growing since 2015, according to the UN.

More than half of the world's agricultural land has been degraded, the World Economic Forum reports, and this is leading to US$400bn (€384bn) in production losses and increasing food insecurity. For the world to be able to continue to feed its growing population, according to a wide body of research and expert opinion, it needs to turn to regenerative agriculture.

Back to the future, so to speak.

Some define regenerative agriculture as a transition from the use of chemistry through biology to the use of natural solutions to fertilise and enrich the soil, adopting technologies to improve genetics to produce better crops and livestock that grow in harmony with nature.

The very essence of regenerative agriculture is the restoration and preservation of soil health, which has been systematically destroyed over the centuries, hastened by the advance of intensive farming and the advent of heavy machinery, fertilisers and pesticides.

Oliver Williams, global head of agricultural investments at Manulife Investment Management, sums up: "Soil health, biodiversity and sustainable productivity are the key inputs to the future of farming. Agriculture production resources – land and water – are limited, and the quality, value and productivity of these resources will deteriorate if management practices do not take their health into consideration.

"We are farmers and custodians of these resources. Our foremost goal is to maintain and improve the condition of the soil, water and the larger environment in general. Regenerative agriculture framework is the most important tool we have to achieve these goals."

Tai Lin, managing partner at Proterra Investment Partners Asia, says: "Over the past two decades, people focused on the energy sector when considering sustainable investment. They looked at transport and infrastructure. It is only in the last decade that the food system has become the third – very important – pillar of the entire sustainable investment discussion. Rightly so, as transport, infrastructure and food production contribute – in equal portions – to 90% of the world's greenhouse gas emissions."

Capital is now flowing into the sector, although still too slowly, for research and development into new farming methods, like vertical farming, with a growing number of start-ups working on innovations and technologies to replace traditional farm practices.

Unfettered by traditional practices, institutional farmers are pushing the boundaries in search of new concepts and technologies to increase the pace of change towards sustainable and restorative agriculture.

Today, farmers have technologies for precision farming which use chemicals where needed and to monitor changes to the land. Innovation gives farmers access to information and data to manage their farms.

Now, as part of their ESG obligations, some large natural capital investors are working with smallholders to improve farming methods and livelihoods.

Since 1997, Sustainable Harvest International, an American not-for-profit organisation, has been working with small farmers in Central America to stop using slash-and-burn techniques and to adopt sustainable cropping.

The entity, founded by a former Peace Corp volunteer, Florence Reed, says that if the world's 500m smaller farmers adopted regenerative agriculture, they could draw down 6bn tonnes of carbon from the atmosphere – nearly 20% of global annual emissions, the equivalent of shutting down every coal-fired power station in the world.

Tai says: "The drive to sustainable investment is being led mostly out of Europe, but it is on the ground in Asia that some of this thought leadership is needed. Asia accounts for the largest portion of global greenhouse gas emissions and is the fastest growing.

"The reason that Asia has the highest emissions is because of its sheer size. When you have two-thirds of the world population wanting to eat as the western world does, there is invariably more production and carbon emissions."

Proterra manages food funds and assets totalling about US$1.3bn in Asia. "Allocating dollars to food and agriculture in a professional way has an impact in itself," says Tai. "So investing in food and agriculture in Asia, for instance, could be the best incremental ESG gain if you handle it correctly."

A number of the world's largest institutional farmers – Nuveen Natural Capital, Macquarie Asset Management's agricultural platform, Manulife IM, Australia's Warikirri Asset Management and many more – have embraced sustainable farming. New players, like New Agriculture and Gresham House, have approached agriculture with the same mindset.

But there is a short-term cost during the transition to sustainable farming.

Williams says: "In any correction of such an important fundamental to the environment, there may be an expense incurred on the investment in reverting to regenerative practices. This is encompassed within the overall capital cost of improvement of the asset and ultimately achieving the required sustainability and investment outcomes."

Manulife IM has assets in the US, Canada, Australia and Chile, and grows a wide range of crops from cotton, soybeans, tree nuts and horticulture on more than 400,000 acres of land – valued at

A thematic framework for investing in the nature and climate transition

We've identified five broad investment themes that comprehensively address the challenges of climate change and nature loss.

Brian J. Kernohan
Chief Sustainability Officer
Manulife Investment Management

Brandon Lewis
Senior Director,
Sustainability, Real Assets
Manulife Investment Management

Regan Smith
Managing Director, Climate Action
Manulife Investment Management

"Nature is the essential algorithm for the future of humanity."
Inger Anderson, Executive Director, UN Environment Programme

Key takeaways

- We believe the urgency of the nature and climate transition will continue to present a broad and deep investment opportunity set, which we've categorized into five distinct themes.
- We view these five themes as being truly global in scope, collectively extending to virtually every asset type, market sector, investment style, and geographic region.

As sustainable asset management has grown exponentially over the past decade or so, it has sometimes struggled to keep pace with the world's rapidly evolving scientific knowledge of climate change and nature loss. At different times and to varying degrees, it's also been subject to changes in the global regulatory and legislative backdrop. Meanwhile, there has been (and continues to be) no shortage of divergent perspectives on the often-controversial topics of climate change, nature loss, and sustainable investing.

Nonetheless, there is a growing consensus that the inexorable nature and climate transition taking place across the globe will have profound implications for the entire world. Indeed, we'd argue that it constitutes a paradigmatic shift in how we power the global economy, how government policy can help accelerate this shift, and how the value of nature will figure more prominently in prevailing economic equations. As political leaders, businesses, and individuals alike are beginning to realize, the stakes are simply too high not to foster a comprehensive nature and climate transition agenda that addresses the myriad risks we face on this front.

From where we sit as a global asset manager, the multipronged nature and climate transition also has the potential to provide a vast and rich spectrum of opportunities—many of them still emerging—for discerning asset allocators. With that in mind, we've identified five investment themes that we think encompass the various challenges and opportunities arising from climate change and nature loss. We believe the investable universe associated with these five themes is enormous, cuts across the global capital markets, and offers a long-term runway that all investors should explore.

1 Natural capital

An unfortunate consequence of modern industrialized human activity is that it has done much to degrade the earth's natural capital, including its forests, agricultural soils, grasslands, and wetlands. Approaches to investing that aim to halt—and in many cases, reverse—this degradation are central to the thematic opportunity in natural capital. From a purely investment vantage point, sustainably managed natural capital assets can improve portfolio diversification, provide an inflation hedge, and boost long-term return prospects, all while promoting vibrant ecosystems.

Surprisingly, despite these attractive and well-documented benefits, society as a whole has historically underinvested in natural capital assets, but that's yet another reason why we believe the global investment opportunity looms so large and merits investor attention. As just one illustration of the upside potential, it's estimated that investments with nature-positive outcomes could represent new business opportunities worth up to $10 trillion annually.

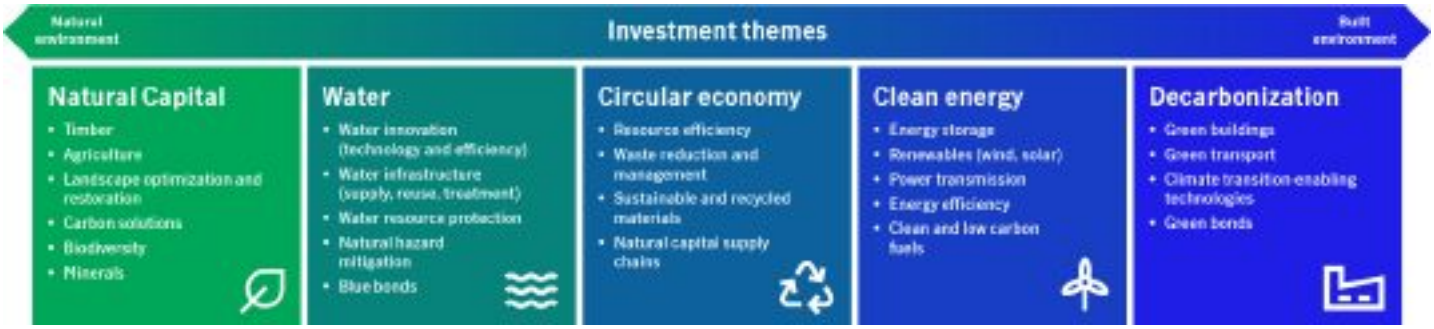
Natural capital by the numbers

Global annual finance flows to nature-based climate totaled $200 billion in 2022 but need to reach $542 billion by 2030.

2 Water-related risks

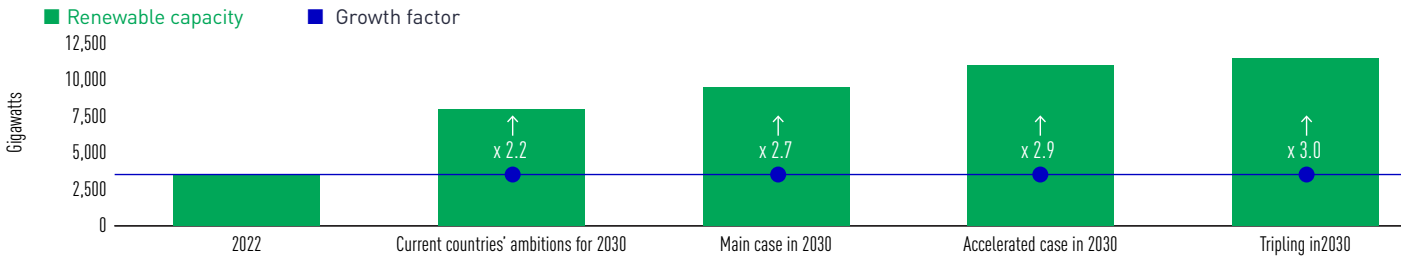
Climate change is primarily a water crisis, as the attendant risks are often realized in the form of water scarcity and weather events such as hurricanes. Governments attempting to deliver clean water and sanitation while reducing the risks overcome funding shortfalls, which opens the door to substantial

Five themes for investing in the nature and climate transition



Source: Manulife Investment Management, 2024. For illustrative purposes only.

Renewable capacity growth and the gap to global tripling, 2022-2030



Source: IEA, 2024

opportunities to generate investment alpha through sustainable management, development, and use of water resources, infrastructure, and technology, as well as natural hazard mitigation.

Globally, the need for water-directed investment is acute: Water scarcity affects more than 40% of the world's population, while around 1.5 billion people lack access to basic sanitation services such as toilets. Such statistics highlight the necessity of making water availability, infrastructure, and resource protection top international priorities. Put another way, water issues make up a pressing investment theme that demands swift, coordinated action to alleviate human suffering over the long term.

Water: thematic investment opportunities

- Water technology and efficiency
- Water infrastructure
- Water resource protection
- Natural hazard mitigation
- Blue bonds

Water need by the numbers

The estimated global investment needed for water infrastructure, including treatment and reuse, is $6.7 trillion by 2030 and $22.6 trillion by 2050.

3 Circular economy

So-called megatrends such as changing demographics, ongoing digitalization, and resource deficiencies are helping to fuel the global transition to a more circular economy. At its core, a circular economy limits the need for continual extraction of raw materials, creating a closed loop that maximizes efficiency of the design, manufacture, distribution, consumption, collection, and recycling of many goods. This is critical because we're currently expending the earth's resources at a clip of over 1.7 times its ability to biologically regenerate.

The circular economy is an integral piece of the strategy for lowering global greenhouse gas (GHG) emissions and, therefore, a key aspect of sustainable agricultural practices. It has also become "big business" in terms of potential solutions—and corporate profitability—across a number of other economic sectors and industries, from automotive, clothing, and electronics to real estate, packaging, and, perhaps most notably, plastics.

The circular economy limits the need for continual extraction of raw materials

Source: European Commission, 2020

Circular economy: thematic investment opportunities

- Resource efficiency
- Waste reduction/management
- Sustainable/recycled materials
- Natural capital supply chains

Circular economy by the numbers

By 2040, China alone could reap annual benefits of up to $10 trillion from key sectors of its economy adopting circular economic principles.

4 Clean energy

We see the production, storage, and management of clean energy from recurring natural sources as a generational opportunity for sustainably inclined investors.

Renewable energy is readily recognizable as being emblematic of climate- and nature-oriented investment themes. Undeniably, this is an industry in which tremendous amounts of capital have been spent to date in trying to evolve the global energy system. The International Energy Agency has described several areas of momentum in clean energy development, including climbing electric vehicle sales, which are contributing to increased energy efficiency across the economy and sponsoring pathways for investments to aid the clean energy transition. While these are already a not-insignificant component of the overall global energy mix, they'll likely require massive capital inflows going forward, particularly if governments in Europe and elsewhere are to meet their stated ambition of helping to triple renewable energy capacity by 2030.

Clean energy: thematic investment opportunities

- Energy storage
- Renewable energy sources
- Power transmission
- Energy efficiency
- Clean and low carbon fuels

Clean energy by the numbers

It's estimated that for 2024 alone, total spending on clean energy technology and infrastructure could amount to around $2 trillion.

5 Decarbonization

A crucial part of forging a low-carbon future for the world lies in supporting traditionally high-emitting sectors of the global economy in their long-term transition to net zero carbon. For this reason, we see a wide range of decarbonization investment opportunities across asset classes and market segments. Some of these are tied to innovations that, in one way or another, involve reimagining the already-built economy and environment.

Among high-emitting sectors, a large portion of all GHG emissions comes from buildings, making the real estate sector a prime target for decarbonization efforts. While the devil's in the details of implementing tougher controls over buildings' energy efficiency and power sources, there are strong incentives to help facilitate the decarbonization transition in this sector. Beyond real estate, we also see numerous decarbonization investment opportunities in transportation (e.g., electric vehicles) and heavy industry (e.g., steelmaking).

Decarbonization: thematic investment opportunities

- Green buildings
- Green transportation
- Climate transition technologies
- Green and transition bonds

Decarbonization by the numbers

In 2021, the percentage of total global carbon emissions caused by buildings was approximately 40%.

Final thoughts for investors

We live in a time of climate change, which means living with a global complex of risks that's painfully visible in worsening droughts, fires, and storms, as well as in large-scale community displacements. We also live in a time of disappearing nature, which poses threats to the world food system and a dangerous decline in global biodiversity. Accordingly, we believe that nothing less than the fate of our planet and the future of human welfare depends on ensuring a robust, successful global nature and climate transition in the years to come.

But while we view the negative potential here as being too great to ignore, from an investment standpoint, the upside potential may be equally too compelling to overlook. For forward-thinking investors, understanding the dimensions and dynamics of the global nature and climate transition is where sustainable investing may offer an array of active opportunities to make a lasting positive impact on the world while at the same time helping to build portfolio value for the long term.

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Manulife Investment Management

AGRICULTURE

US$4.2bn at the end of September 2024.

The manager is progressively implementing regenerative farming into its land-based assets. "Many of the common regenerative practices are already incorporated into our farming system," says Williams. "These include no-till or minimal till, establishment of cover crop, crop rotation, mulching in farm, composting of bi-products to enhance poor soils, integrated pest management to reduce chemical usage, and so on.

"For the past two years we have surveyed our farm managers on the use and extent of regenerative practices utilised on our farmland. All our farms – both tenant and directly-operated – across all geographies use at least one regenerative practice, and in 2023, 75% of our properties used four or more. We also pilot new practices, such as the application of biochar on our apple orchards, that help us learn more about regenerative practices before applying them at scale."

Williams says the impacts on cost and output, or yields, of these practices are generally positive in both the short and long term. "Output may be reduced, stay the same, or in some cases actually increase, depending on the geography and practice applied. However, overall profit and soil health should both improve with the introduction of regenerative practices, helping ensure that we can continue sustainably managing agriculture assets into the future."

Other large agricultural land managers, backed by capital and access to continuous research and development, are also making meaningful inroads in cutting carbon emissions with state-of-the-art techniques (see manager case studies from page 49).

The search for natural solutions in regenerative farming also starts from the production of seedlings. London-based Cibus Capital owns Withcott Seedling in Queensland, Australia. The business can produce 300m vegetable seedlings a year.

Withcott's main source of carbon emissions comes from the medium used in its potting mix. Historically, plants are propagated in peat moss, which is extremely carbon-intensive, says Damon Petrie, Cibus Capital's consultant investment director fpr Australasia. Because peat moss is mined, he says, it does not regenerate quickly, so it is a depleting resource and a negative for biodiversity.

Replacing peat moss (pictured) with other natural materials can reduce emissions

To reduce its emissions, Withcott is working to replace peat moss with natural materials like coconut husks, rice husks or milled woodchip. "We are on a multi-year journey to transition to a more sustainable medium which will lead to a meaningful fall in our emissions. We hope to fully replace peat moss in our potting medium in the next two to three years," Petrie says. Withcott began trialling new potting mixes 15 months ago at commercial scale.

The seedling business also uses an inorganic material known as vermiculite for its water-holding quality. Petrie says Cibus has a two-step approach to the removal of peat and vermiculite from its potting mix. "Step one is to reduce its use by 50%; step two is to go completely organic."

Technologies are also shifting agriculture to the glass house or vertical rack, replacing the need for large acreage to produce the same amount of food. Vertical farming and greenhouse farming are now producing vegetables in many countries, including Singapore and Europe.

Gresham House produces 20 tonnes of leafy greens a week from its 25,000sqm vertical farm in Norfolk. Peter Bachmann, managing director of social infrastructure, says: "We believe it is the largest fully automated vertical farm in the world. We are building more vertical farms to replicate our vertical farming elsewhere in the UK and overseas.

"We see big growth potential for this business. Ultimately, we believe we can grow soy, rice, wheat and peas. And if we can grow these crops in vertical farms, there aren't many things left we can't grow.

"We try to take a system-wide approach to tackling big food problems," he says, listing the benefits of vertical farming. "First, it uses 250-500 times less land than traditional farming, and up to 1,900 times less carbon and 95% less water, chemicals and pesticides. And because the food is produced locally there are no air miles. It will also have less food wastage as it has a longer shelf-life."

Lin says: "It is very easy to think about primary production or farming, but one should look at the entire value chain. Of course, you can do regenerative agriculture upstream, but equally you must think about midstream, where the effluence or emissions from the processing or the yield losses occur in food production downstream, where packaging and consumer habits are becoming unsustainable."

"Our foremost goal is to maintain and improve the condition of the soil, water and the larger environment in general"

OLIVER WILLIAMS

"It is only in the last decade that the food system has become the third pillar of the entire sustainable investment discussion"

TAI LIN

TOP 40 INVESTMENT MANAGERS

Fields, forests, fast

The convergence of large timber and agriculture specialists is fuelling the growth of a new natural capital investment management industry. Richard Lowe reports

The companies included in this year's top 40 natural capital investment managers ranking have more than €125bn in assets under management in total. A little over half of that figure represents forestry and timberland, and a slightly smaller share is made up of agriculture/farmland.

New York-based MetLife Investment Management leads the pack overall due to its large agriculture mortgage programme in the US. For similar reasons, it is the largest manager in the agriculture ranking.

Another insurance-owned asset manager, Manulife Investment Management, comes in at second overall, but the Toronto-headquartered firm manages a far larger forestry/timberland portfolio and tops the ranking for this asset class. It manages softwood and hardwood plantations and mixed natural forests mainly in the US (56%) but with sizeable holdings in Australia and New Zealand (41% combined).

Next is Nuveen, owned by New York-based US institutional group TIAA and whose natural capital business is built on the agriculture and forestry businesses formerly known as Westchester and GreenWood Resources. Nuveen is largest in agriculture and comes second in this asset class.

PGIM Real Estate, owned by US insurer Prudential Financial, is fourth overall and third in agriculture thanks to its large investment platform that invests in both debt and equity in the asset class. PGIM's agriculture and forestry operations fall under its real estate subsidiary.

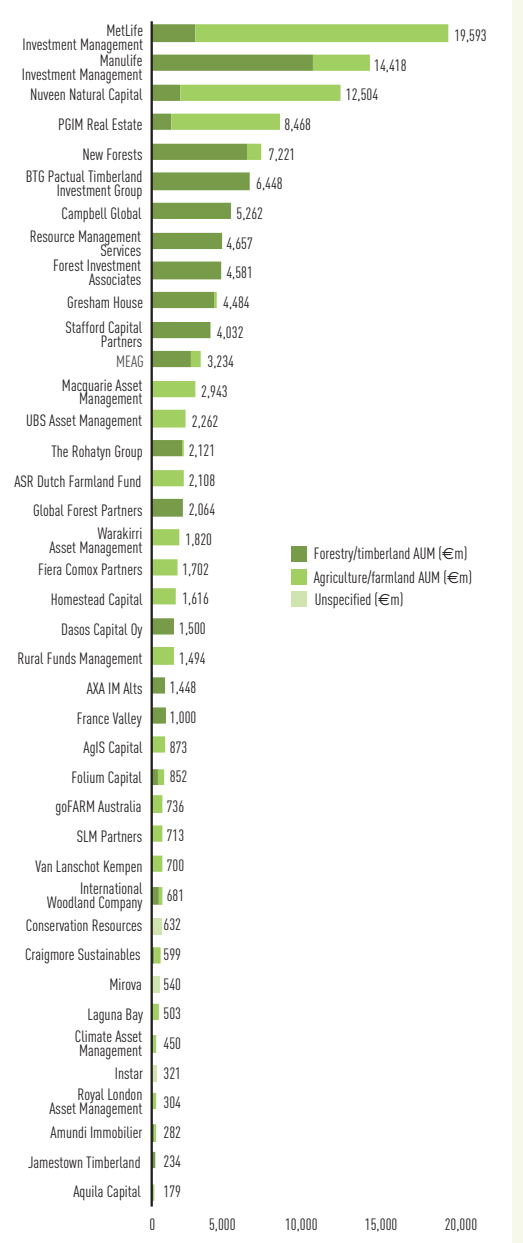
New Forests is the only company in the top five overall not headquartered in North America. The Sydney-based firm, which was acquired by Japanese firms Mitsui and Nomura in 2022, is the third-largest forestry manager. It is also expanding into agriculture with the newly launched New Agriculture subsidiary (see page 48).

A common theme across all these large groups is a clear ambition to be able to be present in both forestry and agriculture as interest in holistic natural capital investment strategies increases among institutional investors.

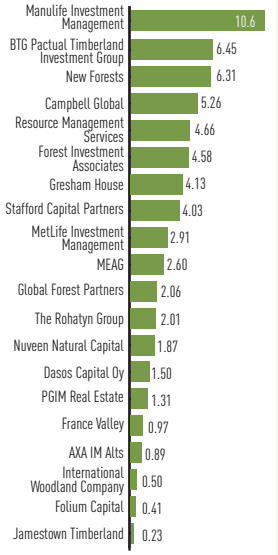
The largest firms tend to dominate the space, with the top 10 representing close to 70% of total AUM and the top five representing just under 50%.

"New York-based MetLife Investment Management leads the pack overall due to its large agriculture mortgage programme in the US"

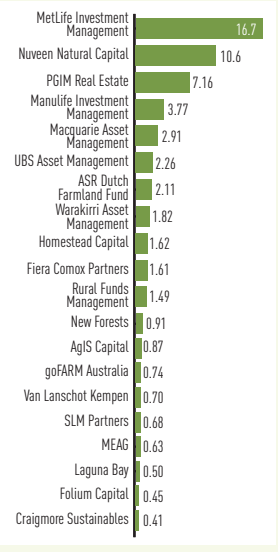
TOP 40 FUND MANAGERS



Top 20 forestry/ timberland (€bn)



Top 20 agriculture/ farmland (€bn)



CASE STUDY

Wheat harvesting in Australia: agriculture remains the dominant land use in the country

Ploughing a new furrow

Fifth-placed New Forests has big plans for its agriculture arm. Florence Chong speaks to head of New Agriculture Bruce King

New Forests

- **Natural capital: €7.22bn, ranked fifth**
- **Forestry: €6.31bn, ranked third**
- **Agriculture: €912m, ranked 12th**

New Forests, founded in 2005, is the third-largest forestry investment manager, but in recent years has been expanding into agriculture and today has more than €900m in assets under management in the sector.

The firm has managed agriculture for clients like Alberta Investment Management Corporation (AIMCo) for several years, but in 2022 it relaunched the business as New Agriculture.

Arguably, agriculture is where most substantial change can be achieved, because it remains the dominant land use. In Australia, the total area of land under primary production is nearly 446m hectares – 58% of the Australian land mass. Excluding grazing of natural vegetation, this area reduces to approximately 101m hectares (13%). By comparison, the plantation forestry sector (excluding native vegetation) represents approximately 1.7m hectares, just 0.2%.

These figures drive the philosophy behind a decision by the successful Sydney-based New Forests to establish New Agriculture, a new plank of its fund management platform, initially focused on Australia and New Zealand.

Today, New Agriculture manages agricultural land equivalent to the size of a small European country. Along with investment partner AIMCo, New Agriculture acquired what was known as the Kimberley Cattle Portfolio from a Chinese tycoon in late 2023 for A$300m (€181m). The transaction ceded control of 2.9m hectares of mainly cattle grazing land in northern Western Australia to New Agriculture.

"To be able to own and manage such a large parcel of landscape does give us an ability to play an outsized role in improving the land with regenerative agriculture," says Bruce King, head of New Agriculture.

Australia offers a fertile environment for institutional investors like New Agriculture because it is a liquid market. Around A$10bn worth of agriculture assets are transacted every year in Australia, according to King.

Family-owned land

"More than 90% of agricultural land is held in family businesses, which are often financed by debt," he says. "We see an opportunity to bring long-term patient capital to bear and make the kind of investments that allow us to improve soil health and the entirety of the production system.

"We have the ability to focus on a regenerative approach from sequestration of carbon in the soil through to improving access to biodiversity corridors; doing so, we can keep natural native fauna and flora integrated with the landscape."

The Kimberley asset was New Agriculture's second joint investment with AIMCo in as many years. In 2022, the partners bought Lawson Grains, a leading grain producer in Australia, from Macquarie Asset Management.

Together with the Kimberley assets, New Agriculture now manages more than 3m hectares. The acreage under management is expected to grow further following the launch of a new landscape strategy for which New Agriculture aims to raise A$650m to A$800m from investors keen to gain exposure to land-based assets. The platform has already identified a pipeline of assets.

"The new vehicle will focus on four main production sleeves – irrigated and rain-fed row cropping; permanent cropping including horticulture, livestock and forestry," says King. "It wouldn't be a landscape strategy without some form of forestry."

The strategy will pave the way for New Agriculture to diversify into permanent cropping, which usually means vineyards, nut and fruit trees.

New Forests itself has been involved with agriculture for 15 years. It cultivates significant agricultural land, accounting for about 10,000 hectares, as part of existing forests and landscape management strategies.

Agriculture took on greater significance with the takeover of Lawson Grains, a sprawling operation of 11 aggregations across three states. It came with around 90,000 arable hectares, then devoted to growing grains. "We have continued to add assets which has expanded to 120,000 arable hectares. But not all the land in the portfolio is arable," says King. "Lawson Grains is a fantastic fit to our portfolio."

King joined New Forests from a federal government agency, the Regional Investment Corporation, to lead the agricultural business in 2022 and to prepare for the launch of the new business.

Carbon emissions and soil health

He says the company's first focus when it took over Lawson Grains was to set up a baseline of carbon emissions and soil health. "We implemented a soil carbon project and registered it as a soil carbon project," he says. "By registering it, you are able to generate Australian carbon units. You can either sell them into the market or use them as an offset for existing emissions on our property. This gives us the potential for an additional revenue stream.

"We are starting to build up the amount of organic soil carbon that is in the soil by changing our management practices. Over the next 25 years, our forecast is that we can lift the percentage of ground carbon from 1% to 1.3% – a 30% increase – across more than 10,000 hectares."

New Agriculture has reduced tillage on the farm and adopted 'green-on-green spraying', a new technology that visually distinguishes weeds from crops. Stubble from harvesting is left behind and cover crops are cultivated to die back and return micronutrients to the soil. It also helps to create a store of fungal activities in the soil.

"Traditional farming has been about dividing agriculture into monoculture or into very specific enterprises," says King. "The real difference in our approach is that we understand that not every hectare of land can be managed in the same way. We look at how we can best optimise the overall landscape through managing biodiversity, carbon, cropping and introducing permanent crops.

"With Lawson Grains, we have expanded the mandate to include other forms of farming on the land. Previously, the sole focus was on cropping every hectare of land to drive returns. We have brought livestock into some areas and are looking at potentially using less productive land for afforestation."

Of the vast Kimberley asset, King says the first critical task has been to improve infrastructure. "The soil under the pastureland is delicate," he says. "Australia's northwestern region gets very big wet seasons in summer and then extended dry periods over the winter. We have invested in building fencing and watering systems. We fence off areas during the wet season and move the cattle to other areas. This will allow the soil to rejuvenate and the pasture to strengthen. But it is a multi-year process to improve the overall health of the soil."

Healthy soil is more resilient to extreme weather. King says it takes longer for healthy soil to be affected by drought, because it retains more moisture and when the rain does come, healthy soil has better infiltration and absorbs water more quickly.

"The real difference in our approach is that we understand that not every hectare of land can be managed in the same way"

BRUCE KING

'Cool burning', a patchwork burning technique borrowed from Australia's indigenous culture, has been integrated into the land management as part of the bushfire mitigation strategy. When fuel accumulates on the ground and a major bushfire breaks out, like the one in New South Wales in 2019, some 80% of forest biodiversity and native animals can be destroyed.

New Agriculture has continued a project started by the previous owner to build swales – shallow channels that divert stormwater – on overgrazed and eroded areas of the land to slow water runoffs, trap seeds and enable weeds to grow back over time and to regenerate native pastures.

"We have trial sites and continue to expand the programme as we identify more degraded areas," says King. "We are interested in talking to the Western Australian government for support of the project. We hope to demonstrate to other beef producers in the region how this method of land management can improve and return degraded pasture to production."

New Agriculture has undertaken other works to improve production and cut back emissions, including the use of the latest genetics which play a key role in improving the fertility of the herd, faster production and other characteristics to improve the overall output.

In embracing a fresh scientific approach to farming, New Agriculture says there is a place for traditional agriculture which relies on artificial stimulants like fertilisers or pesticides, but the preference is for natural systems. "We work to increase yields using natural systems and processes," says King. "This is how we regenerate and enhance land – a very scarce resource."

Headed for the trees

CEO John Gilleland tells Christopher Walker why institutional investors will continue to take cover in timberland

Campbell Global

- **Forestry: €5.26bn**
- **Ranking by natural capital: seventh**
- **Ranking by forestry: fourth**

In 2021, Campbell Global was acquired by JP Morgan Asset Management in what it termed "an effort to directly impact the transition to a low-carbon economy and provide ESG-minded investment opportunities related to climate, conservation and biodiversity".

Campbell Global is a global investment manager focused on timberland, based in Portland, Oregon. It has four decades of experience selecting and managing more than 5m acres for pension funds and other institutional investors.

At the time of the acquisition, JP Morgan said the transaction would "not impact current investment strategies for Campbell Global clients".

In October 2024, Campbell Global was hired by fast-growing UK workplace pension scheme NEST to manage a global portfolio of direct investments in timberland. At the time, Campbell Global CEO John Gilleland said: "Timberland represents a unique investment that offers NEST's members the opportunity to combine investment and sustainability goals, which include enhanced portfolio diversification, a hedge against inflation, carbon removal to help mitigate climate change, and the preservation of biodiversity."

Campbell Global primarily focuses on core timberland markets in North America, Chile, New Zealand and Australia. Speaking to IPE Real Assets, Gilleland explains that these areas supply wood products to the "key demand regions" in the US, Europe and Asia and the "high-growth demand regions" of China and India. "These regions have developed markets with active buyers and sellers of both timber and timberland, and they have a high degree of institutional ownership of timberland with the required infrastructure to support the investments."

Campbell Global also seeks markets with "established manufacturing and reliable transportation networks" and "areas that may be more resilient to the effects of climate change", Gilleland says.

Oklahoma timberland owned by Campbell Global

CASE STUDY

Key demand drivers

There are "numerous drivers which make timberland an appealing asset class", including "several favourable market trends", says Gilleland, including "high inflation, pent-up housing demand, particularly in the US and Australia, demand for wood as a renewable resource and sustainable construction material, and the scarcity of high-quality forestry assets".

Next is the growing interest in carbon offsetting – by both investors and corporates that are potential consumers of offsets. "We believe demand for voluntary carbon offsets is likely to further exceed supply in the near and mid-term, given the number of climate pledges or net-zero commitments made by a variety of business enterprises," he says. "Nature-based forestry offsets are well positioned in the marketplace due to the attractive co-benefits and price points when compared to direct air-capture solutions."

Investors, particularly in European markets, are also "showing increased interest in preserving biodiversity through their investments", says Gilleland. Campbell Global is keen to stress its sustainability credentials and Gilleland says the firm "takes measures to identify and protect sites with ecologically significant species or features [and] seeks opportunities for partnerships with conservation agencies and organisations".

All Campbell Global-managed properties are certified under the most applicable certification standard for each region.

Maximising the value of timberland investments requires "intensive oversight and administration of third-party contractors [and] a significant amount of local knowledge and expertise specific to this asset class", says Gilleland. At acquisition, Campbell Global develops an initial long-term plan that identifies the various active management strategies that it will carry out.

Gilleland says that in its chosen core regions, Campbell Global "seeks to invest in timber assets that grow key commercial species", meaning primarily softwood (pine) in the Southern US and international regions, Douglas fir and western hemlock in the Western US, and pine and eucalyptus in non-US markets.

"Nature-based forestry offsets are well positioned in the marketplace due to the attractive co-benefits and price points when compared to direct air-capture solutions"

JOHN GILLELAND

In carbon markets, Gilleland seeks properties that are "ideal for improved forest management or afforestation projects that provide additionality, transparency and permanence [in] regions that offer diversification... located in or near processing facilities for future income optionality".

Active management strategies

Campbell Global also develops a variety of active management strategies, including: marketing logs to domestic and export customers; integrating silviculture practices to boost forest productivity; lowering operating costs where prudent; increasing operating scale with bolt-on acquisitions; developing forest carbon projects, and increasing data quality and forest management efficiencies with technological innovation.

Risk management is also a key element of the overall forest management philosophy. Gilleland says Campbell Global "has implemented a thorough and rigorous acquisition analysis and due diligence methodology that both focuses on identifying risks early and considers the unique characteristics of each investment region and potential asset".

The firm seeks to "diminish economic risks through active forest management including portfolio diversification among geography and end-markets, and sound stewardship principles", he says. Active forest management practices also aim to "mitigate both the frequency and magnitude of the potential impacts caused by physical risks".

For Gilleland, the supporting fundamentals of the asset class remain strong. "Pent-up housing demand should continue to drive demand for renewable wood products, as new home construction, along with repair and remodelling comprise about 70% of lumber demand in the US and Australia," he says. "US housing demand among younger homebuyers should continue to spur steady demand through 2025 and beyond, with increased demand in subsequent years as home prices and mortgage rates continue to moderate."

Outside the US, Gilleland expects other established key trends to continue, such as Australia remaining a net importer of lumber, New Zealand rising to meet Asian demand for logs, and Chile being a significant exporter of forest products. "Investor interest in low-cost carbon removal strategies is also likely to contribute to demand for forestland, as growing trees remains one of the most cost-efficient ways to remove carbon from the atmosphere," he says.

Gilleland expects demand for natural capital assets to grow. "Forestland investments [are] providing a leading role in supporting investor objectives, including carbon removal, sustainable investing and protecting biodiversity, while generating long-term strong risk-adjusted returns."

Stafford Capital Partners

- **Forestry: €4.03bn**
- **Ranking by natural capital: 11th**
- **Ranking by forestry: eighth**

Taking the credit

Secondaries specialist Stafford Capital has expanded into the carbon credits market through new afforestation strategies. Florence Chong speaks to CEO Angus Whiteley

Some 18 months ago, Stafford Capital Partners began investing in greenfield forest projects – signalling a significant change of direction for a manager that had invested solely in brownfield assets bought on the secondary market over more than two decades.

The move was a preamble to the launch of a carbon strategy to fill what Stafford Capital perceives as a "desert" in the market for investors seeking exposure to natural capital and, in this instance, in timberland for the additional benefit of carbon credits.

By late 2022, Stafford had established its first carbon-offset vehicle, raising US$242m (€236m) from three UK local government pension schemes. Within 12 months, the strategy had raised US$635m – more than half the US$1bn target.

"The strategy recognises the need to plant more trees to bring all the environment benefits that come from having more forest in the world and a greater supply of timber," says chief executive Angus Whiteley.

Stafford manages US$8.4bn, half of which is in timberland and the other half in private equity and infrastructure. Its timberland assets are in Australasia, North America and parts of Latin America.

Pressure to contribute to climate solutions is inexorable, but hard-nosed institutions, mindful of their fiduciary responsibility to investors, wrestle with the question of whether natural capital is

competitive relative to other asset classes. "This is the discussion we have with potential investors before the ones who put money to work in the natural capital space," says Whiteley.

Two strategies

To meet their requirements, Stafford offers two distinct strategies – one focusing purely on commercial returns, and the second on carbon and the delivery of carbon credits as part of the return.

"Our first strategy is to acquire existing forests and, importantly, we use secondaries to access assets. This gives us higher, solid returns from the underlying mature forests that we can access and which we believe would otherwise be unavailable if investing directly.

"The second is our afforestation strategy. We buy degraded, non-productive land to grow trees for carbon capture and to create biodiversity. This is our greenfield approach. Trees are planted on 70% of the land, and the remaining 30% becomes a riparian zone where nature can sit happily and thrive. Previously and prior to carbon credit being in place, we did not believe this strategy would work because it wouldn't have attracted investor interest."

Nor can it be applied to mature forests. "There may be underlying carbon stored within the forests, but they will be more limited, and it is harder to meet the additionality requirements," Whiteley explains.

The global carbon-credit market continues to display strong growth. Estimates as to the size of the market vary. The World Bank said in 2023 that carbon pricing revenues had reached a record US$104bn, while the LSEG Carbon Market Year in Review in 2023 said the EU emissions trading system was worth around €770bn in 2023, representing 87% of the global total.

The market is complex, made up of compliance and voluntary sectors, but its presence enables managers like Stafford to offer timberland investors an extra revenue source, provided they observe certain additionality and permanence requirements when planting new forests, says Whiteley.

"I should stress that, while the carbon strategy is also delivering a commercial return to investors, that commercial return will be delivered in 10 or 15 years when the trees mature. Along the way, investors get capital growth and the sale of carbon credits. We expect to return 5% or 6% from a greenfield afforestation strategy."

"The strategy recognises the need to plant more trees"

ANGUS WHITELEY

He adds: "Historically, return from timberland is around 5%, which is too low to attract much capital. That is why over the last 30 to 40 years there has been so little new planting of trees, except when there are government interventions, typically in the form of tax, subsidies or state ownership of assets.

"The reason new planting is taking place is because there are carbon credits. We see another 5% return coming from those when combined with the underlying return from timber production, giving investors a commercial return from their investment."

Carbon credit integrity

Whiteley stresses that, for carbon markets to work, there must be transparency and accountability to protect the integrity of the carbon credits. He is also encouraged by the recent COP29 meeting in Azerbaijan which saw moves to make carbon credits transferable across national boundaries.

As well as managing environmental risks effectively, and contributing positively to the environment, he says timberland is a good long-term investment. "Timber and timber products are a fundamental need to society," he says. "This is a core and real characteristic of the feature of these assets, and wood products also happen to have significant negative carbon intensity to them. The forests themselves have a special role in carbon sequestration.

"Capital started to flow into natural capital investments from the institutions in the last four to five years. But the time to do it is to get into the market reasonably early to reap best benefits from the investment."

For this reason, Whiteley is disappointed that potential investors like Australia's cash-rich superannuation funds, which are interested in nature-based solutions to climate change, are restricted from investing in a new sector like natural capital. He says Australia's prudential regulations require superannuation funds to benchmark their performance every year.

"The regulations remove the freedom of a very important source of capital for achieving its goal to be a meaningful player on a global stage," Whiteley says. "It is a pity as Australia wants to be a leader in investing in the environment and it wants to be leaning into this topic and to be recognised as an important player in natural assets."

Stafford has seen active deployment into natural capital markets from UK investors. Parts of Europe are also allocating to natural capital, while another country that has become an increasingly important source of capital is Japan.

Whiteley says that the primary concern of US investors is the financial return. "The GP community in the US reflects a much more established business there than other countries," he says. "Timberland investment strategies originally developed from North America where institutional investors have long bought assets from fully integrated timberland organisations."

Macquarie Asset Management

- **Natural capital: €2.94**
- **Ranking by natural capital: 13th**
- **Ranking by agriculture: fifth**

Growing up fast

Macquarie has been expanding fast in Australia's agriculture sector. Florence Chong speaks to Colin Grigg

Macquarie Asset Management's agriculture platform has risen to the top tier of Australian horticulture producers through a series of savvy acquisitions.

In December, it acquired a majority stake in Fresh Produce Group (FPG) for a reported A$175m (€105.4m). FPG operates about 1,200 hectares of premium farmland, producing table grapes, citrus and berries. It ranks among Australia's largest fruit producers and, with a capital injection from Macquarie, is now poised for rapid growth.

The investment follows Macquarie's recent acquisition of Vitalharvest, one of Australia's largest agricultural trusts. Macquarie and its rival contender, Roc Partners, faced off over 10 rounds of bidding in 2021 to secure the listed company. The final price for Vitalharvest, which owns berry and citrus orchards, was A$375m – up from A$300m.

Macquarie had a blocking stake in Vitalharvest and a long-standing relationship with Costa Group, one of Australia's leading fresh fruit and growing businesses, which leases citrus orchards and berry farms from Vitalharvest.

Horticulture is a growth sector for Macquarie, says Collin Rigg, Macquarie's head of agriculture for Australia and New Zealand, suggesting it will continue to increase its exposure to the sector.

The group's agricultural platform, which has owned and operated agricultural assets on behalf of investors since 2003, is invested in broadacre cropping and pastoral companies Cubbie Station, Cowal Ag, Viridis Ag, Fresh Produce Group, and Paraway Pastoral.

CASE STUDY

Operational control

"Fundamentally, our strategies remain the same," says Rigg. "We retain operational control over most of our assets, and we build those assets into operating businesses on behalf of investors to provide produce that supports growing populations. Our portfolio is diversified with investments in animal proteins, grains and oil seeds, fibre production and horticulture."

Macquarie considers divesting assets as they come to maturity. The firm has transacted over A$2.5bn of assets in the past five years, including around A$900m of realisations in Brazil in 2022, as well as the sale of Australia's Lawson Grains to Alberta Investment Management Company, reportedly for around A$600m.

"Lawson Grains was a great example of our strategy coming to life through the full investment cycle," says Rigg. "We started by aggregating diversified grain production farms and grew that into a fully-fledged operating business prior to exit." Lawson Grains became one of Australia's leading corporate grain farmers, owning 90,500 hectares of arable land and producing more than 200,000 tonnes of wheat, barley, canola and pulses a year.

"For the moment, we are focused on Australia. We are opportunity-led and look to access new opportunities with our equity partners," says Rigg, who does not rule out investing offshore in future.

"We are seeing increasing appetite in agriculture for the fundamentals – to meet increasing demand for high-quality food and fibre as populations grow. The sector can also deliver broader services to the environment, which is where some conversations have gone in recently with the increased interest in natural capital."

Macquarie collaborates with research groups, such as the Commonwealth Scientific and Industrial Research Organisation (CSIRO), which develops technologies to help solve greenhouse gas emissions from farming – ranging from 'enteric' methane emitted by cattle to fertiliser usage and diesel consumption. Such scientific work has led to the introduction of precision farming to improve cost efficiency and lower the emissions intensity of Macquarie's farming systems.

"Our work with CSIRO is to inform ourselves of the source and the size of emissions in each of our operations and with that knowledge to take steps to reduce our emissions. We use the information to establish baselines for all our assets and we then develop a strategy to reduce emissions," says Rigg.

Three-pronged approach

Macquarie takes a three-pronged approach to contain and cut sources of carbon emissions. It sources green electricity through power-purchase agreements with energy suppliers, it revegetates unproductive land for carbon sequestration and it applies precision agriculture technologies to abate residual emissions from key production inputs, including fertilisers, chemicals and diesel.

Precision agriculture in the context of broadacre cropping involves the holistic coordination of many overlapping technologies to maximise soil health, water-use efficiency and nutrient management to benefit current and future year production.

"That is at the core of what we do," says Riggs. "In our cropping businesses, we are adopting smart spraying technology, which allows us to reduce the amount of chemicals used to control weeds and pests and that also reduces our emissions. We are now also able to better match the amount of crop inputs that we use to the production potential of soil by using technology to integrate various data points."

Orange plantation in Australia: Macquarie has invested in citrus orchards

He explains: "If we are using poorer soil then we use less inputs, because we know it is going to produce less. Conversely, with higher-quality soil, we can increase the level of input because we know it is being used efficiently to convert into output.

"Fundamentally, managing soil health is critically important as we get better grazing or cropping from land that performs well. This can at times, for example, require the use of pH-adjusting ameliorants such as lime. We now know the emissions impact of these products and can make informed decisions to manage both cost and carbon emissions.

"That principle is at the core of natural resource management, it is about managing that soil for the best sustainable production in the long term, so we do like to leave as much as we can in place each year."

"Fundamentally, managing soil health is critically important as we get better grazing or cropping from land that performs well"

COLLIN RIGG

Collectively, across Macquarie's rain-fed grain growing activities, its emissions calculator informs it that its cumulative emissions intensity has been 12% better than the benchmark since 2020.

Investors are deepening their understanding of the asset class, says Rigg, adding that agriculture has been introduced to institutional capital primarily on the basis of the sector's ability to generate stable, resilient financial returns. Increasingly, that is linked to sustainability.

He says managers are expected to operate the asset as part of the broader landscape environment. For agriculture to continue to generate financial return – and to attract investment allocations from institutions – managers need to fundamentally manage that land with a view to continually improving sustainability.

Derivative products

Rigg describes the carbon market as "nascent" and biodiversity as "even more nascent" but says both hold promise under the right settings. To date, such newer derivative products from the land are not material to the platform's business. Depending on the locations, and where there are material opportunities to drive measurable biodiversity outcomes, Rigg says the group will look to combine commercial benefits with conservation efforts.

For instance, one of its operating companies, Paraway Pastoral, works with the Biodiversity Conservation Trust, a New South Wales government entity which offers payments and incentives to implement projects to protect and preserve threatened species. In such an instance, he says, it makes sense to establish a partnership.

"At this stage, it is premature to quantify our investment strategies, but the potential is definitely there," says Rigg. "And there is developing interest from government, conservation and philanthropic groups looking to partner with large landowners to see what they can do on the land for environmental solutions."

Grow by name, grow by nature

Warakirri began investing on behalf of Rest superannuation fund in the 1990s. Now its capabilities are in great demand, Adrian Goonan tells Florence Chong

Warakirri Asset Management

- **Agriculture: €1.82bn**
- **Ranking by natural capital: 18th**
- **Ranking by agriculture: eighth**

Warakirri is an Australian Aboriginal word meaning "to grow". Just three years after Warakirri Asset Management began offering agricultural services in the mid 1990s, the Melbourne-based boutique firm received a mandate from an Australian superannuation fund seeking exposure to agricultural land.

That fund, Rest, was an early mover into a sector that is still largely outside the investment mindset of most institutional peers.

Together, Rest and its manager established Warakirri Cropping. The business has grown its portfolio to 11 aggregations totalling more than 150,000 hectares and is today one of Australia's largest grain growers. It owns and operates a diversified portfolio of large-scale and highly productive cropping aggregations across the northern, southern and western grain production zones of Australia.

Along with local superannuation funds, Warakirri has also managed agricultural land for global investors. It managed an Australian row-cropping business for Public Sector Pension Investment Board from 2016 to 2022, when the Canadian investor internalised management of its two majority-owned Australian cropping businesses, BFB and Daybreak Cropping.

After exclusively managing large cropping portfolios for these institutional investors, in 2023 the firm reached a point in its business where it began offering its cropping management capability to new institutional investors for the first time in many years.

This led Warakirri to form a new venture, Solterra, to manage a portfolio of farms on behalf of Alkira Farms, a wholly-owned subsidiary of US-based Farmland Reserves. It is understood that the US investor committed some A$300m (€180.6m) to acquire a seed asset of around 26,000 hectares in a mix of irrigation and dryland cropping in Queensland.

Farmland Reserves is the US$265bn agriculture investment arm of the Church of Jesus Christ of Latter-day Saints, which owns about 370,000 hectares of farmland across Nebraska, Oklahoma and Florida.

Alkira Farms acquired a broadacre cropping portfolio in southern Queensland in 2024

Collectively, Warakirri today manages assets covering 80 individual aggregations spanning 535,000 acres, with 110,000 megalitres of water entitlements valued at A$3.8bn. It is the second-largest agricultural manager in Australia after Macquarie Asset Management.

Focus on sustainability

One guiding principle that has stayed true through the years of managing assets on behalf of Warakirri's investors is that it should generate competitive returns with an ever-increasing emphasis on sustainability.

"Agriculture plays a critical role in managing the world's resources," says Adrian Goonan, investment director for agriculture. "So naturally, sustainable farming systems are important. As natural capital managers we have a role to play in establishing and running farming systems sustainably, so we can leave the planet in a better place for future generations."

Goonan says that resilient, stable returns and taking measures to protect the environment are not mutually exclusive.

"Our experience is that successful agricultural investment has a strong long-term focus on sustainable farming systems and significant investment in systems and practices to enhance soil fertility, reduce water runoff, increase water capture and maximise soil cover to achieve cost-effective productivity and maximise water use efficiency," he says.

"Twenty years ago, our weighted-average portfolio required 88ml of rainfall to produce one tonne of wheat. With the evolution of technology and farming practices, today we can produce the same tonne of wheat with just 66ml. We have made significant improvements in productivity over those 20 years, achieving a 23% gain over the period."

Four businesses

This approach is evident in the management of four distinct businesses – Solterra, Aurora Dairies, Warakirri Cropping and two commingled funds – Warakirri Farmland Fund and Warakirri Diversified Agriculture Fund.

"We have 700 full-time employees with a large number based on farms and employed within the investment strategies," Goonan says, adding that teams of specialists work on improving water use efficiency, productivity, soil fertility and the preservation of soil organic carbon.

"More recently, we are seeing great advancements in technology adoption on our farms. The thinking has shifted from fallowing and resting land to creating more productive and healthier soils, through to planting more diverse crop rotations to improve soil fertility."

There is also increased use of natural fertilisers, such as legumes, to reduce the reliance on synthetic fertilisers. But Goonan says fertilisers still remain an important part of agricultural systems. Certain areas will rely on them more than others. "Then, the strategy becomes how to optimise the efficiency of that synthetic fertiliser," he says.

"We do a lot of work around climate variability and understanding the risks of climate change and the different climate change scenarios on different production systems and regions. These are overlaid with our investment strategies."

Goonan adds: "Our experience and our clients' experience is that very well-scaled, well-considered geographically diverse portfolios can produce very strong and stable returns, and we have found those returns to be comparable to Australian and global equities – with half the level of volatility. We find that agriculture returns have zero or negative correlation to all traditional asset classes.

"We are seeing an increased appetite from the investment community to incorporate environmental services, like carbon and biodiversity values within strategies. Investors are looking at agriculture through a broader lens – positive impacts on people, communities and the environment. This reflects some maturity and a shift from a hard net-zero mandate and the desire for quick wins in carbon offset."

But overall, says Goonan, there appears to be a more balanced approach and a return to the core attributes of agricultural investments and return.

"Investors are looking at agriculture through a broader lens – positive impacts on people, communities and the environment"

ADRIAN GOONAN

TOP 50 INVESTORS

Fertile asset class

Pension fund assets in natural capital are clearly growing, according to this year's ranking. Richard Lowe reports

The 50 largest institutional investors in natural capital own more than €70.6bn in timber, agriculture and related land assets – up from €63.7bn in 2024 – according to this year's research by IPE Real Assets.

The ranking is exclusively for capital owners, predominantly pension funds. It was based on an IPE Research survey and publicly available information, predominantly in the form of annual reports. Where accurate numbers were not available, estimates have been made. Some investors have not been included because of a lack of information.

Once again, the ranking is led by Public Sector Pension Investment Board (PSP Investments) with €10.4bn in assets – up from €8.35bn in 2024. In the past 12 months, the Canadian institution has consolidated its position as the largest foreign investor in Australian agriculture by acquiring more than 8,000 hectares of farmland in New South Wales from Duxton Farms and buying a majority stake in Ellerslie Free Range Eggs, an egg-farming business.

"As was the case last year, North American investors dominate the ranking"

Second in the ranking is another public institutional investor from Canada – British Columbia Investment Management Corporation (BCI), whose natural capital assets have risen from €3.53bn to €4.39bn. BCI is a shareholder in agriculture company Viterra, which entered into a merger with another firm, Bunge, in 2024. BCI's investments in timberland and agriculture form part of its C$20.2bn (€13.7bn) infrastructure and renewable-resources programme.

The remainder of the top five are made up of North American institutions, with the general account of US giant TIAA coming in third with €4.18bn, down from €5.03bn in 2024. Ontario Teachers' Pension Plan is fourth with €4.04bn (up from €2.97bn) and Washington State Investment Board is fifth with €3.4bn (up from €3.21bn).

Aggregate natural capital assets of the top five have increased by approximately 14% from €23.1bn to €26.4bn.

TOP 50 NATURAL CAPITAL INVESTORS

	Company	Country	Natural capital assets (€'000)	Total assets (€'000)	As at
1	PSP Investments	Canada	10,394,626	181,153,719	31/03/24
2	BCI	Canada	4,393,097	171,237,793	31/03/24
3	TIAA (General Account)	US	4,175,255	265,453,765	30/09/24
4	Ontario Teachers	Canada	4,042,270	169,139,768	31/12/23
5	Washington State Investment Board	US	3,399,818	152,945,503	31/03/24
6	Massachusetts PRIM	US	2,986,550	98,276,174	30/06/24
7	ABP	Netherlands	2,949,000	510,000,000	30/11/24
8	CPP Investments	Canada	2,816,807 (1)	557,398,847	31/03/24
9	NZ Super	New Zealand	2,441,768	42,485,160	30/09/24
10	AIMCo	Canada	2,333,787	109,752,916	31/12/23
11	LACERA	US	2,215,427	73,661,574	30/06/24
12	UTIMCO	US	1,897,268	69,295,459	31/08/24
13	BVK	Germany	1,800,000	111,900,000	31/12/23
14	AP2	Sweden	1,795,832	38,251,222	31/12/23
15	The Crown Estate	UK	1,636,362	20,732,005	31/03/24
16	Alaska Retirement Management Board	US	1,394,235	30,812,836	31/10/24
17	PPF	UK	1,255,791	50,774,326	31/03/24
18	AP3	Sweden	1,243,344	44,875,328	31/12/23
19	Future Fund	Australia	1,113,078	140,001,198	30/06/24
20	North Carolina Retirement System	US	1,074,712	115,173,260	30/09/24
21	Ilmarinen	Finland	1,000,000	62,900,000	31/12/24
22	Maine PERS	US	969,866	19,208,083	30/11/24
23	Virginia Retirement System	US	820,138	106,830,132	31/10/24
24	ATP	Denmark	814,291	95,528,912	31/12/23
25	UniSuper	Australia	809,212	86,523,469	30/06/24
26	CalSTRS	US	796,849	333,539,378	30/06/24
27	Sampension	Denmark	792,645	36,421,922	30/11/24
28	Colorado PERA	US	729,838	60,757,635	30/06/24
29	AMF	Sweden	708,366	52,079,128	31/12/23
30	Aware Super	Australia	629,611	113,340,142	31/12/24
31	New Mexico SIC	US	621,515	53,784,082	31/10/24
32	Rest	Australia	607,576	45,568,200	30/06/23
33	PME	Netherlands	560,000	55,728,949	30/11/24
34	Arkansas Teacher Retirement System	US	549,178	20,509,080	30/09/24
35	Florida State Board of Administration	US	540,311	237,063,467	30/09/24
36	Essex Pension Fund	UK	427,074	12,750,811	31/03/24
37	Alberta HSTF	Canada	400,056	15,687,680	31/03/24
38	Lærernes Pension	Denmark	388,765	21,227,941	31/12/24
39	Pensioenfonds PostNL	Netherlands	380,000	9,483,013	31/12/24
40	Varma	Finland	357,000	62,100,000	31/12/23
41	New York State CRF	US	347,486	247,992,194	31/03/24
42	BPL Pensioen	Netherlands	325,000	23,096,740	31/12/24
43	Iowa PERS	US	310,503	40,947,483	05/11/24
44	CalPERS	US	277,914	476,097,239	31/03/24
45	Gothaer	Germany	261,000	32,076,163	31/12/23
46	New York State TRS	US	215,838	135,055,424	30/09/24
47	Oregon PERF	US	198,553	86,245,606	30/09/24
48	South Yorkshire Pension Fund	UK	153,117	12,816,168	31/03/24
49	Pennsylvania PSERS	US	145,221	71,397,221	30/06/24
50	AP1	Sweden	115,751	41,899,186	30/06/243

Source: IPE Research

(1) Relates to 3% of net investments in real assets (CAD $137.3bn). 3% was the proportion allocated to agriculture in the 2023 annual report

As was the case last year, North American investors dominate the ranking, representing more than half of the constituents, unsurprising given the scale and relatively long history of investment in these asset classes by US and Canadian public pension plans.

The Netherlands's (and Europe's) largest pension fund is the only institution based outside North America to make it into the top 10. As reported last year, ABP has close to €2.9bn in natural capital assets.

CASE STUDY

Perfect match for pension capital

Marc Drouin explains to Christopher Walker why PSP Investments has allocated so much capital to agriculture and timber

PSP Investments

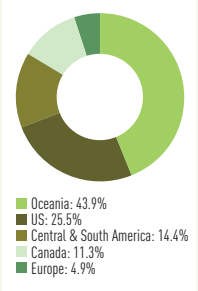
- **Ranked: First**
- **Natural capital assets: €10.4bn**
- **Total assets: €181bn**

Since its foundation in 1999, The Public Sector Pension Investment Board (PSP Investments) has become one of Canada's largest pension investment managers. It invests funds for the pension plans of the Public Service (Canada's civil service), the Canadian Armed Forces, the Royal Canadian Mounted Police and the Reserve Force (Canada's part-time backup armed forces).

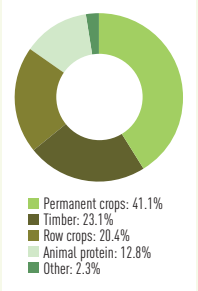
PSP manages a diversified global portfolio worth some C$265bn (€181bn), of which natural resources – which encompasses timber, agriculture and 'related opportunities' – represent C$15.2bn in net assets (rising to C$23.1bn in gross assets under management).

In explaining the investment case, Marc Drouin, senior managing director of real assets and global head of natural resources investments, is very clear in the justification for natural capital. "Natural resources investments – principally agriculture and timberland – have very attractive attributes for pension investors. Given their high component of land, water and biological assets, they offer strong downside protection, a material hedge against inflation and low correlation to other asset classes in the PSP Investments portfolio."

Geographic breakdown



Sector breakdown



Source: PSP Investments

"We focus on real assets in agriculture and timber in investment-friendly jurisdictions around the world where the rule of law prevails"

MARC DROUIN

In the past five years, the investor's natural resources investments have returned 7% per annum.

Geographically, only 11.3% of the portfolio is invested in Canada (see table). By far the biggest geographic concentration is in Oceania – 43.9%, followed by 25.5% in the US. In terms of sectors, permanent crops represent some 41.4% of investments and row crops 20.4%. Timber is 23.1%.

Natural resources investments "typically have two common characteristics", according to Drouin. Firstly, "we focus on real assets in agriculture and timber in investment-friendly jurisdictions around the world where the rule of law prevails" and secondly, "we partner with best-in-class local operators".

When it comes to evaluating potential partners, Drouin says PSP Investments is "looking for high-performing and like-minded local operators who share our long-term investment philosophy and commitment to sustainable practices, employee health and safety, responsible stewardship of natural resources and positive community contribution."

PSP Investments pursues investments with a high component of land, water and biological assets, with the opportunity for low cost of production, including through scale. "We favour commodities and sectors that will benefit from secular trends, including strong demand growth and constrained supply," says Drouin. "We have a preference for businesses with access to both the domestic and export channels and that are well suited for complementary 'post-farmgate' vertical integration."

An examination of some of the key investments illustrates these criteria – and the preference for Oceania. Kaingaroa Timberlands, for example, is one of the largest contiguous softwood plantations in the southern hemisphere, located in the Central North Island of New Zealand. PSP Investments first invested in the business in 2013 and has partnered alongside the New Zealand Superannuation Fund and Kakano, a limited partnership representing a collective of the Central North Island iwi (or Māori tribes).

"Kaingaroa Timberlands is a premium asset with the lowest cost structure in the country," says Drouin. "It has internationally recognised sustainability certifications, such as the Forest Stewardship Council, with a stated focus on safety, increasing biodiversity and positively contributing to local communities."

Meanwhile, Hewitt was PSP Investments' first agricultural platform in Australasia in 2015. PSP is in partnership with the Hewitt family in one of the first institution/family agriculture partnerships of scale in Australia.

The company has grown the business through properties aggregation and vertical integration – it now has more than 200,000 livestock across 2.2m hectares. Drouin says: "Today, with assets in Australia and the US, Hewitt is a global leader in organic beef, vertically integrated across livestock raising, processing, marketing and distribution."

Similarly, Australian Food and Fibre (AFF) is a partnership launched seven years ago between PSP Investments and the Robinson family with a focus on cotton production. Since then, as with Hewitt, the AFF partners have grown the business through the aggregation of properties while also developing major post-farmgate capabilities in cotton processing, logistics and marketing.

"AFF is a leader in Australian cotton growing and processing. It has a clear commitment to sustainability, with certification from Leading Harvest and Regen Ag," says Drouin.

"Natural resources investments can have exceptionally long investment horizons, measured in decades not years," says Drouin, looking to the future. "It can involve long down cycles [where] access to capital from a well-resourced partner such as PSP Investments and low cost of production are critical."

There are challenges, however. "It goes without saying that all agricultural businesses need to build resiliency to manage more pronounced weather volatility," he says. "Across the natural resources portfolio, we are actively supporting the development of transition plans and the achievement of sustainability certifications."

Given the global nature of the markets for the commodities produced by PSP investments, they "also monitor for potential challenges related to trade action around the world".

CASE STUDY

A global partnership approach

In 20 years, BCI has built up a sizeable direct natural capital portfolio with strategic partners, Owen Martin tells Christopher Walker

BCI

- Ranked: Second
- Natural capital assets: €4.39bn
- Total assets: €171bn

British Columbia Investment Management Corporation (BCI) is the provider of investment management services for British Columbia's public sector. With C$250bn (€171bn) of gross assets under management, it is one of the largest asset managers in Canada.

BCI's C$6.42bn natural capital assets form part of its C$28.1bn infrastructure and renewable resources programme, which invests in "renewable resources assets that are critical to meeting the demands of a growing global population".

Approximately 23% of the programme is invested in natural capital assets, specifically agriculture and sustainable timberlands. This includes more than 3.5m acres of timberlands and nearly a million acres of farmland, as well as related facilities. BCI's geographic focus has been on OECD countries and South America, along with some indirect exposure to other emerging markets.

BCI made its first investment in natural capital in 2005. Today, about 90% of its natural capital holdings are direct investments with strategic partners. The typical anticipated holding period spans over 20 years.

Owen Martin, director of infrastructure and renewable resources, says: "Investments in natural capital are an important part of our overall strategy, offering diversification and strong risk-adjusted returns for our clients. We typically target institutional-quality assets with sustainable competitive advantages and minimal disruption potential that would be suitable as long-term holdings. We can be creative when structuring deals in this space but primarily invest in platform companies where we can support growth and acquisition opportunities."

The focus on strategic partners is crucial. "Who we invest with is equally as important as what we invest in," Martin says. "We seek management teams that are strong operators and understand the unique needs of pension fund investment managers. We partner with co-investors who possess deep sector expertise and also share our objectives and values."

This is borne out by examining some of the main investments. In 2017, BCI entered the market in Uruguay as part of a consortium to acquire LUMIN, a leader in socially responsible and environmentally sustainable wood products. LUMIN's eucalyptus and pine plantations are on reforested farmland and the company employs forestry practices for comprehensive biodiversity management. LUMIN also aims to have a strong track record for health and safety and contributes to the local economy through more than 800 direct jobs.

Martin says: "We partnered with BTG Pactual Timberland Investment Group on this investment – a global timberlands manager with specialised expertise in the sector that shares our expectations for performance and commitment to responsible investing."

Ag Partners Capital (APC) is an agriculture platform company established in 2021 by BCI alongside experienced farmland investors and operators. It acquires permanent crop farmland in the US and focuses on mature, sizable properties in established regions well positioned for long-term sustainability. It targets crops such as almonds, pistachios, wine grapes and citrus. Martin says: "APC's investment structure aligns ownership and operations to deliver superior financial returns and production results."

Martin continues: "Natural capital encompasses various sectors and geographies, some with unique challenges. Timberlands and agriculture face moderate levels of cyclicality based on fluctuating demand, pricing and conditions, which can create near-term challenges. Other factors like high interest rates have recently contributed to a decrease in deal flow and created a noticeable bid-ask spread."

Nevertheless, he asserts, "as a long-term investor with patient capital, we view the cyclical nature of these sectors as strong potential buying opportunities".

"Who we invest with is equally as important as what we invest in. We seek management teams that are strong operators and understand the unique needs of pension fund investment managers"

OWEN MARTIN

Grain storage in Australia: BCI is a shareholder in Viterra

Martin adds: "Another area to consider with natural capital investments are environmental factors that can affect the long-term productivity of the underlying assets." For example, water management and regulation are increasingly a concern for agriculture businesses and wildfire risks are affecting timberland investments. Climate change is presenting a mix of tailwinds and headwinds.

"Understanding the ESG risks and opportunities at the outset of each investment is essential," says Martin. "Evaluating sustainability policies and practices is embedded in our underwriting, asset management and monitoring processes. For direct investments, BCI takes an active governance approach through board involvement, providing oversight of our portfolio companies' sustainability strategies."

Martin sees "long-term tailwinds that continue to support natural capital investments". He says: "A focus by governments on net-zero carbon emissions, for example, provides long-term opportunities for value creation. These are assets that the world relies on every day, which are becoming increasingly important with policy and consumer trends related to global population growth, rising incomes and climate change. A positive correlation to inflation and substantial value tied to land add to their appeal."

He believes BCI is "well positioned to continue securing the best deals in natural capital". He adds: "The characteristics of natural capital assets strongly align with BCI infrastructure and renewable resources' investment strategy, and we expect it to remain an attractive place for our clients' capital."

CASE STUDY

Experienced Danes branch out

Danish pension funds like Sampension have been some of the earliest adopters and today they embrace a broadening asset class. Pirkko Juntunen reports

Sampension

- Ranked: 27th
- Natural capital assets: €793m
- Total assets: €36.4bn

Danish pension funds, alongside their Nordic peers, have been pioneering natural capital investments for some time, with timberland representing the largest component, followed by agriculture and most recently ecosystem restoration.

Some of the early adopters, since the mid-2000s include Sampension, AP Pension and Lærernes Pension. Last spring, the troika further boosted investments into the asset class with a US$160m (€156m) commitment to Ecosystem Investment Partners V, a fund focused on environmental restoration, conservation and biodiversity.

Danish pension funds typically allocate 2-3% of their assets to natural capital, but this could grow, says Céline Claudon, chief commercial officer at International Woodland Company (IWC), the natural resources investment specialist and adviser to Sampension.

Sampension, for example, the third-largest pension fund in Denmark, has DKK5.91bn (€792m) in the asset class, representing just over 2% of its total assets. Claudon estimates that Danish institutional investors have invested close to US$4bn in natural capital over the past 30 years.

IWC's green natural capital investments encompass timberland, agriculture and ecosystem restoration, although Claudon notes that Danish investors "tend to gravitate towards forest investing". She says: "Agriculture is more prominent in other countries and if Danish funds are investing, they tend to do it directly and domestically. It is growing but is smaller than forestry today.

"Ecosystem restoration is also smaller compared to forestry. However, IWC and some of its Danish clients have been involved in this space since 2007-2008, focusing on core markets, particularly the US, where there is a regulated market for it."

Claudon expects investments in agriculture and ecosystem restoration to catch up to forestry, but this is yet to be apparent. "In particular, investing in ecosystem restoration is likely to grow in the next few years because of the biodiversity crisis as well as regulatory pressure," she adds.

Another factor that plays into ecosystem restoration and biodiversity-focused investments, particularly locally, is the 'feelgood factor'. Claudon says: "Restoring ecosystems like wetlands and contributing towards such projects is viewed very positively by the general public and the pension fund members."

Sampension's journey into the asset class started fairly typically for Danish and other investors, through a number of smaller tickets in global closed-ended funds, which Claudon insists is a good way to enter and get to know natural capital. "Today Sampension's main focus is on a few large separate accounts in core markets only," she says. "We see the same trend among other investors that have been invested for some time, not only in Denmark, but the rest of Scandinavia and the US as well."

There are several reasons for moving from closed-ended funds to separate accounts, including increased investor control and discretion, better governance and often lower fees, Claudon explains. The fee structure in the sector has been comparable to that of private equity funds, she adds.

"By focusing on core markets, pension funds such as Sampension gain access to what I would call the true characteristics of the asset class, including relatively attractive risk-adjusted returns compared to other asset classes. When investing in emerging markets, you take on a number of extra risks that do not necessarily pay off."

Having control and ultimately deciding where to invest and when is key for Sampension and it remains selective and patient for the right investment opportunities, Claudon says, noting that this highlights a clear difference between more seasoned investors and newer entrants that can be more eager to place capital more quickly.

Sampension has substantially increased its knowledge and in-house expertise, but it still uses IWC as an adviser because the asset class is still such a niche sector. "You need specific experts who understand how to grow different tree species, understand potential effects of climate change on forestry and know the different timber markets, as investing in timberland is a very local endeavour," Claudon notes.

Compared with the wider rush into natural capital among investors, activity among Danish pension funds has been more measured, she argues. Claudon attributes this to the Danes having started investing globally in the asset class earlier, along with other Nordic and North American investors. Investors in markets such as France and Germany have, to date, tended to focus on domestic assets.

IWC was established in 1991 by Danish institutional investors in order to be able to invest internationally in forestry. IWC is both a natural capital manager and adviser and is now majority-owned by BNP Paribas Asset Management, with US$6bn in assets under management or advice (its advisory business is dominant).

Claudon says that one of the biggest changes during her two decades at IWC is the motive investors have for investing in natural capital. "When I started, it was purely for the financial characteristics of the asset class: the inflation hedging, the diversification factor due to low correlations with other asset classes, and the attractive risk-return profile," she says. "The importance of climate change, carbon-footprint considerations and, lately, the biodiversity crisis, are of increasing importance, making them key reasons for investing, particularly for new investors, rather than purely diversification and financial metrics."

One example of a relative newcomer is PFA, the largest private pension fund in Denmark, which for two years sought to invest up to US$130m in US forests through Forest Investment Associates.

Claudon says forestry continues to provide opportunities, even if competition is heating up in some markets, making it harder to deploy capital. "The key is to be patient and differentiate yourself from others," she adds.

Based on IWC studies and other research, Claudon estimates that there is US$200bn worth of institutional-quality timberland in the world, excluding privately held forestry. "While there is much more forest than that in the world, it is not all investible because of quality issues or conservation reasons," she says.

"Out of the US$200bn, some US$120bn are invested today, so there is still US$80bn to be invested in by institutional investors. Also, it is likely that another US$100bn will be investible once the privately-held timberland becomes available – together with afforestation projects, newly planted areas, but this is likely over a 20-year time period, rather than five to 10 years," she says.

"Investing in ecosystem restoration is likely to grow in the next few years because of the biodiversity crisis"

CÉLINE CLAUDON

Challenges also remain. For existing, experienced investors, finding the right opportunities, to grow exposure or replace assets as existing investments mature can be a conundrum. New investors have to grapple with the question of which category natural capital belongs in.

Claudon says: "Is it part of the alternatives bucket, if there is one, or is it real estate? Is it green infrastructure, or is it inflation-hedge? I hope and expect that in the next few years, natural capital will be its own bucket and an allocation on its own in order to fully appreciate its unique characteristics."