

## MANAGING THE CARBON ASSET FROM INVESTMENTS IN NATURAL CLIMATE SOLUTIONS

IMPLICATIONS FOR INVESTMENT STRATEGY AND PORTFOLIO DECARBONISATION

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Large-scale investment in Natural Climate Solutions (NCS) is required as part of the transition to achieve net zero emissions by 2050. As investors seek ways to invest in NCS, they need to understand how to value and manage carbon sequestration as an asset.

In this paper, New Forests provides investors with guidance on managing carbon through greenhouse gas (GHG) accounting for the land sector or through nature-based carbon credits and the intersection of these approaches with emerging net zero standards.

This guidance seeks to support investors' understanding of how to integrate sustainable landscape management with optimised returns, climate impact, and portfolio decarbonisation.

# Introduction

Climate change is a major consideration for the strategic asset allocation decisions of some of the world's largest investors, an increasing number of whom are committing to net zero emissions across their investment portfolio by mid-century.

In fact, the members of the Net Zero Asset Owners Alliance and Net Zero Asset Managers Initiative now collectively represent \$50 trillion in assets under management, approximately half of global assets under management. As investors search for opportunities to invest in climate solutions and to decarbonise portfolios, they will invariably look at technological transformations in energy, industry, and transport. But what is now also increasingly understood by investors is that the only credible pathway to net zero GHG emissions must also include investment in "Natural Climate Solutions"the protection of threatened

forests, improved management of forestry and agricultural production systems, and reforestation of landscapes.<sup>1</sup>

Deforestation, agricultural production, and processes that degrade land and nature currently contribute about onequarter of global GHG emissions. All modelling that limits global warming to under 2°C requires both eliminating deforestation as well as reforestation of hundreds of millions of hectares by 2050 in order to remove carbon from the atmosphere.<sup>2</sup> "Removals" are critical to achieving net zero, which by definition is a state in which greenhouse gases released into the atmosphere are balanced by emissions removals out of the atmosphere. Modelling of potential activities that can limit global warming to under 2°C by 2030 indicates that approximate a third of cost-effective mitigation by 2050 can be provided by NCS (see Figure 1 and Figure 2).<sup>3</sup>

This transformation in land use will require the mobilisation of hundreds of billions of dollars of investment. This investment must be channelled into strategies and companies that protect and restore ecosystems and improve working lands as a part of their investment thesis and long-term value creation approach.





1 NCS may also sometimes be referred to as "nature-based climate solutions" and "nature-based solutions".

2 United Nations Intergovernmental Panel on Climate Change, Special Report: Climate Change and Land.

3 Roe et al (2019), "Contribution of the Land Sector a 1.5°C World," Nature Climate Change.

4 Adapted from Griscom et al (2017), "Natural Climate Solutions," Proceedings of the National Academy of Sciences.

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5 Griscom et al (2017), "Natural Climate Solutions," *Proceedings of the National Academy of Sciences*. Graphics adapted from Nature Conservancy magazine and 5W Infographics.

#### Introduction

As investors seek to invest in NCS, they need to understand how to value and manage the climate benefits as an asset. The carbon sequestration associated with forests, agriculture and ecosystems can be recognised in GHG accounting and potentially counterbalance emissions associated with decarbonising an investment portfolio. Furthermore, investments that increase carbon sequestration may also result in the creation of carbon credits that can be sold into government-regulated or voluntary carbon markets. However, the rapid development and complexity of regulatory and industry standards relating to GHG accounting and carbon credits have made it challenging for investors in NCS to understand how they work and relate to each other and their implications for investment strategy and portfolio decarbonisation.

Climate change mitigation outcomes as measured by GHG accounting versus as measured by carbon credits are two different, but interrelated, approaches. On one hand, they are not fungible, and they are guided by different rule sets developed by government bodies, industry associations, and civil society. On the other hand, both give investors optionality around how to manage carbon sequestration as an asset—an asset that could be used to potentially counterbalance one's own emissions or sold to a third party to support their climate change mitigation. At the same time emerging net zero standards and climate disclosure requirements are impacting decisions on the use of GHG accounting and carbon credits by companies and investors as part of credible climate action plans.

As carbon prices rise, forests, agriculture, and other land assets become increasingly valued for their climate change mitigation potential. Understanding how to quantify, value and manage climate benefits through GHG accounting and carbon markets is rapidly becoming a critical aspect of investment strategy and portfolio optimisation.

In this paper, New Forests provides investors with guidance on current policy and industry direction for GHG accounting and nature-based carbon credits and the intersection of these approaches with emerging net-zero standards. The guidance aims to support investors' understanding of how to manage investments in forestry, agriculture, and land for their climate benefits, to achieve their portfolio decarbonisation objectives and to gain exposure to new investment opportunities in NCS.

### **Carbon Credits:**

The purpose of a carbon credit project is to create a positive climate change mitigation outcome that would not have happened without the existence of the carbon project. The sale of carbon credits (also referred to as carbon offsets) creates a revenue stream that financially supports the operation of the carbon credit project and delivery of the climate change mitigation outcome. Both government-regulated and voluntary carbon markets have created economic value for NCS via carbon credits, and in some markets the carbon price has reached a level that is now influencing investment strategy in forestry, agriculture and conservation.

#### **GHG Accounting:**

GHG accounting involves creating an inventory of an organisation's GHG emissions from their operations and value chain, with the GHG Protocol being the most widely adopted accounting standard globally. However, to date there has been no standardised way of accounting for GHG emissions and emissions removals (i.e. carbon sequestration) from the land use sector. The GHG Protocol is currently developing such a standard for the land use sector, which is expected to be finalised in late 2022. This GHG accounting standard has the potential to enhance investment in NCS by creating a pathway to account for removals and therefore a pathway for quantifying the contribution of NCS to portfolio decarbonisation.

# Managing Land for Climate Impact– Key Considerations

As a manager of forests and agricultural lands around the world, New Forests is increasingly presented with options on how to manage these assets to optimise outcomes both in terms of commercial performance in alignment with clients' return expectations and contribution to clients' portfolio decarbonisation objectives.

To date, decisions on how to optimise land use have primarily been driven by financial considerations based on cash flows from timber, agriculture and/or land leasing, taking account of investors' risk-adjusted return expectations. The climate change mitigation outcomes associated with different land use decisions have not factored into investors' investment strategy or policies, and some investors have viewed cash flows associated with carbon markets as risky and have discounted them as a result. However, as investors seek out investments in climate solutions, the quantification and valuation of the climate benefits of land management decisions must also become part of investment strategy. Moreover, as carbon prices rise, investors also cannot ignore the economic impact of how carbon impacts optimal land management decisions. Examples of asset management decisions in forestry and their commercial and climate implications are shown in Table 1.

Management decision	Commercial implication	Climate impact	Relationship to GHG accounting	Relationship to carbon markets
Moving from short-rotation forestry (e.g. pulp and paper) to long- rotation forestry for higher value uses (e.g. construction and feature-grade timbers)	NPV assessment comparing near-term vs longer-term but higher cash flows	Net increase in carbon sequestration in the forest as well as increased carbon storage in long-lived wood products	Net increase in carbon sequestration will be captured in GHG accounts	May be eligible to generate carbon credits in some standards
Reforestation of marginal agricultural or degraded lands	Establishment of new plantations has a significant J-curve and income generation can take 10-30 years depending on species and end markets	Net increase in carbon sequestration in the forest as well as increased carbon storage in long-lived wood products	Net increase in carbon sequestration will be captured in GHG accounts	May be eligible to generate carbon credits under some standards

Table 1 - Incorporating Climate Change Mitigation into Forestry Asset Management Decisions

#### Managing Land for Climate Impact—Key Considerations

Management decision	Commercial implication	Climate impact	Relationship to GHG accounting	Relationship to carbon markets
Land use planning	Land can be managed for forestry, agriculture, environmental conservation, and/or renewable energy (windfarms, solar farms) determined by relative value of end markets for timber, agricultural commodities, ecosystem services, land leasing and investor return expectations	Land kept in forests has highest climate change mitigation value Rising price of agricultural commodities can lead to conversion of commercial and non-commercial forests to agricultural land to maximise returns; this is associated with emissions from loss of forests and from agricultural activity	Increase in emissions and/or increase in removals will be captured in GHG accounts Carbon stocks may also be disclosed in GHG accounts	Avoided conversion of forests may be eligible to generate carbon credits under some standards
Enrolment in carbon projects	As the price of carbon rises, forest conservation, long rotation forestry, and reforestation become more commercially attractive; however, depending on the rules of the carbon scheme, land may be encumbered by the carbon project for a certain number of years Policy and market risk must be understood	Both scaling the conservation of mature temperate and tropical forests and reforestation globally are necessary actions to successfully mitigating climate change	Sale of carbon credits must be reported separately in GHG accounts An investor must take care not to "double count" climate benefits accruing to them in their GHG accounts if carbon credits are sold to a third party	

To incorporate land use into portfolio decarbonisation and investment strategy, investors need assurance around how to quantify and value the climate benefits of management decisions such as those presented in the table above. This requires an understanding of GHG accounting, the relationship between carbon credits and GHG accounting, and the relationship of both to emerging net-zero standards and the stakeholder environment. These aspects are discussed in the following sections.

# GHG Accounting of Emissions and Removals

Many investors will be familiar with GHG emissions accounting, which has evolved over the past 30 years and today is a core part of setting and benchmarking net zero targets. Guidance for the accounting of GHG removals associated with land use and technology-based carbon capture and storage is emerging, with significant implications for sustainable forestry and land management.

## **Emissions Accounting**

The Greenhouse Gas Protocol is a global, standardised framework to measure and report GHG emissions, co-managed by the World Resources Institute and the World Business Council on Sustainable Development (WBCSD).<sup>6</sup> GHG emissions are divided into three scopes (see Figure 3), covering an entity's emissions from their direct operations as well as from their value chain, and covers the six Kvoto Protocol greenhouse gases.<sup>7</sup> The GHG Protocol is the most widely adopted accounting standard globally for GHG emissions.

### **Removals Accounting**

Investment in sustainable forestry and land use can generate significant carbon sequestration and create optionality among different land uses and forestry management decisions. A robust and standardised way of quantifying and accounting for carbon sequestration over a period of time (also referred to as "emissions removals" or "removals") in a set of GHG accounts is required to benchmark the climate change mitigation benefits forestry and land use to other sectors and evaluate the merits of different investment and asset management decisions from a climate perspective.

### Lack of Standardised Removals Accounting Framework

Carbon stocks in biological systems, such as forests, have been measured for decades. A forest carbon inventory can report on carbon stocks (the amount of carbon stored in a forest at a given point in time), changes in carbon stocks over a period of time, and/or carbon flux (movement of carbon into and out of the forest in relation to the atmosphere). Measuring forest carbon inventory can be complicated by various factors, including availability and accuracy of data; determining which carbon pools are counted such as foliage, roots, soil carbon, and deadwood; measuring carbon stored in

### Figure 3 - GHG Protocol Emissions Scopes

Scope 1	Scope 2	Scope 3
Direct emissions from sources owned or controlled by the company	Indirect emissions from sources that are owned or controlled by the company	Emissions from sources not owned or controlled by the company but that are related to company activities
Examples:	Examples:	Examples:
Vehicles	Electricity purchase	Employee travel
Equipment		<ul> <li>Financed emissions</li> </ul>
Fuel combustion		

6 GHG Protocol, <u>https://ghgprotocol.org/</u>.

The six GHGs are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride (SF<sub>6</sub>). Each gas is weighted by its global warming potential and aggregated to give total greenhouse gas emissions in CO<sub>2</sub> equivalents.

#### **GHG Accounting of Emissions and Removals**

harvested wood products; and others. However, technology, analytical tools, and data continue to improve. Satellite technology, LiDAR, and other analytical tools are supporting remote sensingbased quantification of carbon stocks, particularly in diverse natural forests.<sup>8</sup> The UN IPCC and forest industry-related groups have also continued to develop data sources and tools that can be used to support estimation of carbon stocks in a range of commercially managed forests and in harvested wood products.

However, despite the critical importance of forests and sustainable land use in addressing climate change and supporting investment in NCS, there is currently no standardised way to account for removals in GHG accounting. While emissions accounting under the GHG Protocol has been developing over 30 years, removals have been left out. Carbon storage and removals have not had clear guidance; some companies have reported them separately, and others have not reported at all because conventional practices in agriculture and forestry may be leading to net emissions rather than net removals. In some cases, biogenic emissions (like burning biomass) are reported alongside but separate from the core GHG emissions accounting. This has resulted in fragmented and inconsistent reporting and overall low transparency from the forest, agribusiness, and land use sectors.

### Forthcoming GHG Protocol Land Sector and Removals Guidance

Importantly, the GHG Protocol is now developing the GHG Protocol Land Sector and Removals Guidance,<sup>9</sup> which will provide a framework for how organisations should account for GHG emissions and removals from land use, land use change, bioenergy, and related topics in their GHG inventories, building on the Corporate Standard and Scope 3 Standard.<sup>10</sup> New Forests was a member of the Technical Working Group for Carbon Removals in 2020 and continues to consult on the drafting of the Guidance through its membership in the Forest Solutions Group of the WBCSD. The current expectation is that the final Guidance will be released by the end of 2022.

Applying a GHG "inventory approach" via the GHG Protocol to the land sector can help translate the climate impact of forestry, agriculture and other land use assets into a context that aligns with the way climate impacts are measured and reported in other sectors. Broadly speaking, as summarised in the figure below, New Forests' current expectation is that this approach would account for, or create an inventory of, direct operational emissions and removals in Scope 1 and value chain-related emissions and removals in Scope 3. As with GHG accounting in any other sector, this accounting would entail estimation of actual emissions and removals over the course of a reporting period (e.g. annually) and reporting these in alignment with guidance from the GHG Protocol.

### Figure 4 - Generalised Approach to Accounting for Removals and Emissions, Forestry Example



<sup>8</sup> Technology-based monitoring and verification of carbon in biological systems is evolving rapidly. Ground-based measurements can quantify carbon with high precision but typically at higher costs. Remote sensing seeks to reduce costs and/or offer landscape-scale estimates; the precision of such estimates will ideally improve over time.

<sup>9</sup> GHG Protocol, <u>https://ghgprotocol.org/land-sector-and-removals-guidance</u>.

<sup>10</sup> Note that the forthcoming guidance on removals will cover not only biogenic systems but also technology-based removals such as Carbon Capture and Storage.

#### **GHG Accounting of Emissions and Removals**

## Figure 5 - Accounting for Emissions and Removals in Land Management and Biogenic Products, Forestry Example

Removals stored in land-based carbon pools due to biomass growth Emissions from land-based carbon pools from land use change, disturbance, decomposition

**Biomass carbon pools** soils, dead organic matter

Storage in wood products and transfer to product-based carbon pools across value chain

Accounting for emissions and removals in the land sector is complicated by the fact that there are various carbon pools, in which both emissions and removals may be occurring, and furthermore, carbon storage and emissions can happen along the value chain. Figure 5 is a simplified process diagram of a forestry operation, showing where direct emissions and removals would take place in land-based carbon pools and how carbon storage in wood products would transfer along the value chain (for example if the forest operator harvested timber and sold it to a mill for processing into various products). How these various emissions and removals are measured and accounted for in the various scopes are the key questions being considered in drafting the GHG Protocol Land Sector and Removals Guidance. There are also issues to consider related to data availability, longevity of carbon storage in wood products, and traceability of wood products in the supply chain.

New Forests is working through these issues with other forest sector companies as part of the GHG Protocol consultation process, which is in progress. From New Forests' perspective, a successful outcome to the GHG Protocol process would ensure that emissions and removals from the land use sector are considered in scopes similar to other sectors

so that the impact of the land use sector can be compared directly to the climate impact of other sectors—this will be particularly important to investors as they seek to incorporate NCS into their portfolios as part of a climatealigned investment strategy. Furthermore, we will continue to advocate for the GHG Protocol Land Sector and Removals Guidance to recognise and encourage the benefits of carbon storage in wood products, which are a critical substitute for high embodied energy products like steel and cement.

## Reporting of GHG Accounts by Investors

The Partnership for Carbon Accounting Financials (PCAF)<sup>11</sup> is a partnership of international financial institutions, such as pension funds, who have developed the Global GHG Accounting and Reporting Standard for the Financial Industry.<sup>12</sup> The purpose of the Standard is to report "financed emissions", i.e. investors' Scope 3 emissions resulting from emissions associated with their investments. This PCAF standard has been developed in accordance with GHG Protocol Scope 3 Corporate Value Chain guidance and currently covers six sectors: listed equity and corporate bonds, business loans and unlisted equity, project finance, commercial real estate, mortgage,

and motor vehicle loans. The standard focuses on how financial institutions should report on Scope 1, 2, and 3 emissions associated with its investment portfolio, and it also provides guidance on avoided emissions (e.g. from financing renewable energy rather than fossil fuels). The accounting of financial institutions' financed emissions is directly related to setting net zero targets in alignment with the Paris Agreement. Under PCAF's draft guidance on accounting for removals,<sup>13</sup> investors would be able to claim their pro-rata share of financed removals in GHG accounts where there is joint ownership of assets. However, New Forests' understanding from those who participated in putting together the draft PCAF guidance on removals is that the guidance is deliberately high-level at this stage and likely to be further revised once the GHG Protocol Land Sector and Removals Guidance is finalised.

It is important for institutional investors and members of the PCAF to understand issues around GHG accounting for the land sector and support practical and transparent accounting frameworks for removals given the importance of the land use sector not only as a major driver of climate change today but also as a critical sector to invest in for climate change mitigation and to transition investment portfolios to net zero.

Product carbon pools Includes, e.g. storage in wood pellets

Emissions from

combustion

biogenic product pools

from decomposition or



<sup>11</sup> Partnership for Carbon Accounting Financials, https://carbonaccountingfinancials.com/.

See https://carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf.

<sup>13</sup> See https://carbonaccountingfinancials.com/files/consultation-2021/pcaf-draft-new-methods-public-consultation.pdf.

# How Carbon Credits Differ from GHG Accounting

As noted at the beginning of this paper, New Forests believes there is confusion among investors and other stakeholders about the difference between GHG accounting and carbon credits. The discussion in the prior section established that GHG accounting (which includes carbon and other greenhouse gases) reports estimates of actual emissions—and soon, removals—during a given reporting period, categorised into scopes that include both direct operational impacts and indirect impacts along the value chain. Then, what are carbon credits and how are they different?

## Quantifying Impact through Baseline-and-Credit

The purpose of a carbon credit project is to create a positive climate change mitigation outcome that would not have happened without the existence of the carbon project. This reflects the concept of "additionality", i.e. that the carbon credit project creates a climate change mitigation outcome that would not have happened in a business-as-usual scenario. The sale of carbon credits (also referred to as carbon offsets) creates a revenue stream that financially supports the operation of the carbon credit project and delivery of the climate change mitigation outcome.

In all carbon projects, a baseline must be set, with the baseline representing what activities and resulting emissions and removals would have taken place under a business-as-usual scenario. Different carbon credit systems taken different approaches to setting baselines. In many voluntary carbon market standards, such as Verra, baselines are typically set at a project-level and reflect a scenario based on real-world conventional practice. For example, a proponent of a clean cookstove project in Kenva might present the baseline as continued inefficient burning of firewood and the clean cookstove project as generating carbon credits from reducing emissions from the reduced harvest of firewood in a particular project area, such as a local district or group of villages. Another example could be a proponent of a Reduced **Emissions from Deforestation** and Degradation (REDD) project setting the baseline as continued deforestation from oil palm production in West Kalimantan, Indonesia, and the carbon project reducing emissions through protection of the forest.

However, baselines may be set in other ways. For example, in the regulated California emissions trading scheme, the state's forest carbon protocol uses a performance-based metric that applies objective third-party data to set the baseline. The protocol uses US Forest Service data to determine average carbon stocks regionally in different forest types across the United States. A proponent of a carbon project under the California system can then generate carbon credits by protecting carbon stocks for 100 years that are above the relevant regional average carbon stocks (referred to as the "common practice" baseline) and by further increasing carbon sequestration by the forest through biological growth.

The setting of emissions baselines and the crediting of climate change mitigation against these baselines is the key conceptual difference between carbon credits and GHG accounting:

- GHG accounting is an inventory of actual emissions and removals, as the case may be, for a given reporting period.
- Carbon credits result due to a project-based intervention (e.g. building a wind farm, introducing cook stoves, planting trees) that leads to a climate change mitigation outcome against an emissions baseline.

The critical difference between these two systems is captured in Figure 6, adapted from the GHG Protocol.

### How Carbon Credits Differ from GHG Accounting



### Figure 6 - The Difference in GHG Accounting and Carbon Credits<sup>14</sup>

for corporate/entity accounting

Figure B Comparison against a baseline scenario for project accounting

GHG reductions must be quantified relative to a reference level of GHG emissions. Under national and corporate-level GHG accounting, reductions are typically quantified against actual GHG emissions in a historical base year (see Figure A). For project-based GHG accounting, however, GHG reductions are quantified against a forward-looking, counter-factual baseline scenario (see Figure B). The most important challenge for GHG project accounting is identifying and characterising the baseline scenario.

## Implications of GHG Accounting vs Carbon Credits

The differences between GHG accounting and carbon credits frameworks have a few implications from an investment perspective, as described below. These concepts are explored in further detail in the final section on shaping investment strategy.

#### 1. Differences in quantifying

climate impact. GHG accounting and the measurement of carbon credits under a carbon project may quantify climate impact differently. Take a simplified example of the biological growth of a forest over a period of one year. From a GHG accounting perspective, the climate impact would be the total carbon sequestration over that time period, net of any emissions associated with managing the forest. If that same forest were enrolled in a carbon credits project, the number of carbon credits awarded may be less than the actual carbon sequestration

associated with the biological growth. The number of carbon credits awarded would depend on the baseline and would also likely be adjusted downward for risks associated with permanence and leakage.<sup>15</sup>

Furthermore, the particularities of carbon credit scheme design create different outcomes. As noted above, the common practice baseline in the California carbon market allows carbon credits to be generated for the protection of existing carbon stocks above the baseline, but the climate benefits of protecting these carbon stocks

from harvest would not be recognised in GHG accounting, which instead focuses on removals. In other instances, there may be a net removal from an accounting perspective, but no carbon credits are generated; for example, New Zealand uses an "averaging" baseline where carbon credits can only be generated up to the average carbon stock over a timber rotation.<sup>16</sup> Removals beyond that average baseline would not be eligible to generate carbon credits, although they could be captured in GHG accounting.

14 Adapted from GHG Protocol for Project Accounting, https://ghgprotocol.org/sites/default/files/standards/ghg\_project\_accounting.pdf. 15 Forestry and land-use projects must account for the risk of non-permanence; that is, the risk of the climate change mitigation benefits being reversed via intentional or unintentional actions or events (e.g., deforestation, fire, etc). Many standards for carbon offset projects require a percentage of offsets generated to be held in a pooled buffer account that all projects contribute towards. This effectively operates like an insurance mechanism for unintended reversals of emission reductions or removals. Leakage refers to the risk that the carbon project leads to emissions-causing activities in another geography.

<sup>16</sup> Read more about the "averaging" rule at https://www.mpi.govt.nz/consultations/additional-proposed-amendments-to-the-climatechange-forestry-sector-regulations-2008/introduction-to-averaging-carbon-accounting-for-forests-in-the-emissions-tradingscheme/#:-:text=Averaging%20accounting%20is%20a%20new,registered%20as%20a%20permanent%20forest.

### How Carbon Credits Differ from GHG Accounting

2. Decisions over maintaining value of removals "On GHG Balance Sheet" or selling to third parties as carbon credits. When the GHG Protocol finalises its Land Use and Removals Guidance, the climate impact of managing biological assets in various sectors-forests, agriculture, and agribusinesswill effectively be brought onto the GHG balance sheets of investors. For those forest and land assets in the portfolio generating removals, investors may be presented with an option of retaining that carbon asset for accounting in their own portfolio decarbonisation in line with industry guidance and best practice, or where feasible to do so, enrolling those removals into a carbon project and selling them to third parties in the form of carbon credits. In selling the credits, the investor transfers their property rights over that climate change mitigation to the buyer, and the investor's GHG accounts would have to disclose those carbon credits as sold.

The decision for investors around points #1 and #2 will be based upon investment strategy, an investor's climate action plan, and evolving regulations and disclosure requirements governing investors' climate action and pathway to net zero. Financial analysis and biological modelling can support an investor's decision making, through an assessment of volume of forecast removals from a GHG accounting perspective versus the volume of carbon credits that could be sold over time, assigning a relative value to each.

3. Treatment of Avoided Emissions. Deforestation and other land use changes are significant contributors to climate change. Protecting threatened forests and other ecosystems from conversion to agriculture or other land uses can reduce emissions that otherwise would have occurred—often referred to as "avoided emissions". Avoiding emissions by protecting irrecoverable carbon stocks is an important activity required by climate science to achieve Paris Agreement targets.<sup>17</sup> Nonetheless, avoided emissions are not directly incentivised in GHG accounting—in GHG accounting, avoided emissions

fall outside of the scopes as accounting only takes an inventory of *actual* emissions or removals that occurred during a reporting period. An outcome of the GHG Protocol on Land Use and Removals may be that disclosure of emissions associated with deforestation (for example, in agribusiness supply chains) will ultimately lead to action to stop deforestation. However, avoided emissions through forest protection-often referred to as REDD projects—may be able to generate carbon credits that can be sold and generate revenue. Such activities are particularly important in tropical landscapes in Southeast Asia, Africa, and Latin America where deforestation rates may be high and can be integrated into sustainable forestry investment. Climate action groups, such as the Science-based Targets initiative (SBTi), discussed in the next section, support investment in forest protection activities as part of a holistic set of actions by companies and investors to achieve net zero.





## Over the past decade, international multi-stakeholder groups have emerged to support the corporate and financial sectors to transition to net zero through guidance and standards setting.<sup>18</sup>

A number of these efforts are coalescing around the concept of "science-based targets", meaning the targeting of deep emission reductions in alignment with achieving net zero by 2050. However, while the climate science is clear that NCS are critical to achieving net zero emissions by 2050 and remaining under 2°C of global warming, the incorporation of NCS and the use of nature-based carbon credits as part of "credible net zero strategies", as defined by standards bodies, is still evolving.

New Forests seeks to draw investors' attention to how standards-setting bodies are looking at GHG accounting, net zero target setting, and carbon credits in their rules and the potential implications for investment strategy. These standards may determine whether and how removals are able to counterbalance emissions at the portfolio level. We focus here on the SBTi because the SBTi seems to have emerged as the leading standards body for setting net zero emissions targets.<sup>19</sup> At the

same time, it is increasingly likely that disclosure requirements, government regulation, and internationally accepted sustainability-based accounting standards will ultimately govern investors' GHG accounting, disclosure and target setting, and claims around climate action.<sup>20</sup>

 <sup>18</sup> For example, the Transition Pathway Initiative provides corporate climate action benchmarking for institutional investors; the Paris Aligned Investment Initiative provides institutional investors with guidance on how to align portfolios with net zero; and the Science-based Targets initiative sets climate science-based pathways for corporations, investors, and individual sectors to achieve net-zero standards.
 19 Science-based Targets initiative, <u>https://sciencebasedtargets.org/net-zero</u>.

<sup>20</sup> See, for example, US Securities and Exchange Commission, <u>https://www.sec.gov/news/press-release/2022-46</u>, UK Financial Conduct Authority, <u>https://www.fca.org.uk/news/news-stories/new-rules-climate-related-disclosures-help-investors-clients-consumers</u>, and International Sustainability Standards Board, <u>https://www.ifrs.org/groups/international-sustainability-standards-board/</u>.

## Science-based Targets initiative

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The SBTi relies on the accounting framework of the GHG Protocol to set the standard as to what constitutes a science-based pathway to achieving net zero emissions by 2050 for various sectors of the economy. Broadly speaking, for most companies the adoption and successful implementation of the SBTi Corporate Net-Zero Standard would lead to a 90% reduction in Scope 1, 2, and 3 emissions by 2050.<sup>21</sup>There are four key elements of the Net Zero Standard, including setting near-term and long-term emission reduction targets aligned with a 1.5°C pathway by 2050 and "neutralising" residual emissions, as shown in Figure 7.





1) **To set near-term SBTs:** 5-10 year emission reduction targets in line with 1.5°C pathways

) To set long-term SBTs: Target to reduce emissions to a residual level in line with 1.5°C scenarios by no later than 2050

**Beyond value chain mitigation:** In the transition to net-zero, companies should take action to mitigate emissions beyond their value chains. For example, purchasing high-quality, jurisdictional REDD+ credits or investing in direct air capture (DAC) and geologic storage

**Neutralisation of residual emissions:** GHGs released into the atmosphere when the company has achieved their long-term SBT must be counterbalanced through the permanent removal and storage of carbon from the atmosphere.

## Restricted Use of Carbon Credits in Claiming Net-Zero

Carbon credits are viewed by SBTi as having restricted usage: only carbon credits associated with removals-based activities (e.g. planting trees) can be used to address the residual emissions of companies, i.e. the emissions left over after having achieved a science-based target. Furthermore, SBTi does not contemplate financial institutions buying carbon credits for their own portfolio decarbonisation, but for portfolio companies to purchase and apply carbon credits to address residual emissions in alignment with the corporate net-zero standard.<sup>23</sup>

The impact of this restricted usage of carbon credits on volume of demand, level of demand for removal credits over avoided deforestation credits, and pricing remains to be seen and will be dependent on the scale of adoption of the SBTi and whether government regulation of corporate climate action mirrors SBTi requirements. Robust adoption of SBTi-like standards that restrict usage and type of carbon credits could mean that carbon credit demand would primarily be for removal-based credits and would primarily support neutralising residual emissions from hard-to-abate sectors like aviation and cement.

At the same time, the SBTi strongly encourages additional financing of climate change mitigation in "beyond value chain mitigation" climate change mitigation that takes place while the company is on its way to achieving its sciencebased target—which could involve purchase of carbon credits from any kind of project, including REDD. The SBTi is currently working on guidance for what beyond value chain mitigation means in practice. The impact of this forthcoming guidance on carbon credit markets remains to be seen.

## Potential for Removals to Counterbalance Emissions at Portfolio Level

The SBTi notes in its draft Foundations of Net Zero for Financial Institutions, released in November 2021, that a significant increase in NCS is required in the near term to achieve beyond value chain mitigation and address residual emissions. SBTi notes that further work is required to "determine the role of emissions removals within asset classes to effectively counterbalance residual emissions and stipulate the conditions for financial institutions to claim net-zero emissions across their operations and financing activities."24 In other words, if investment in sustainable forestry and land management leads to removals, how can those removals credibly counterbalance emissions in other parts of the portfolio?

The guidance from SBTi is unclear on this question at this stage. The SBTi guidance for net-zero target setting for the Financial Sector, released in February 2022, has not answered this question. The guidance focuses on decarbonisation pathways for individual sectors as the primary means for moving towards net zero and does not provide guidance on how financial institutions should invest in climate solutions as part of a credible net zero strategy. It also does not provide guidance on how removals from naturebased or technology-based activities could counterbalance

classes. At this stage from a disclosure perspective, it is critical for investors to separately report their financed removals from generation and sale of carbon credits to support transparency and reduce risk of "double counting" of climate benefits.

The SBTi also released, in January 2022, draft guidance for the forestry, land use and agriculture (FLAG) sector on setting science-based net zero targets.<sup>25</sup> The FLAG guidance covers both net-zero aligned emission reduction and removal targets. Of note, the draft guidance suggests that FLAG sciencebased targets cannot be applied to non-FLAG targets, specifically that FLAG removals cannot be applied to non-FLAG targets. For example, if a company or investor made substantial increases in removals that put them on the path to net-zero in their forestry and agriculture holdings, any "excess removals" could not be applied to achieving a net zero target in, for example, any holdings related to energy or infrastructure. New Forests' interpretation of this guidance is that SBTi wants each sector to be on its own sciencebased decarbonisation pathway via deep emission reductions with limited reliance on removals.

New Forests views these as critical issues requiring a balance of climate science, practicality, and timeliness. Given that biological assets need time to grow and sequester carbon, more investment in NCS needs to start today, rather than after 2050, when science-based targets are theoretically reached. Getting the right incentives for NCS through net zero frameworks will be important for scaling investment and achieving climate mitigation.

 23 SBTi Foundations for Science-Based Net-Zero Target Setting in the Financial Sector: Draft for Public Comment, <u>https://sciencebasedtargets.org/resources/files/Foundations-for-Science-Based-Net-Zero-Target-Setting-in-the-Financial-Sector.pdf</u>.
 24 Ibid.

## Integrity of Carbon Credit Markets

Some investors have expressed concern to New Forests about participation in carbon credits markets given rising stakeholder scrutiny around supply-side integrity (i.e. that carbon credits deliver the emissions reduction they claim to represent), demandside integrity (i.e. that the purchaser of the carbon credit is using it as part of a credible strategy in line with achieving the goals of the Paris Agreement), and potential environmental and social risks of carbon projects. These are important issues for investors to consider because they entail reputation risk, questions around integrity of climate action, and stakeholder management around land use. While a comprehensive discussion is outside the scope of this paper, New Forests has highlighted a few emerging issues for investor awareness.

### Supply-side Integrity

Critics of the quality and integrity of nature-based carbon credits typically focus on issues related to additionality and permanence, which are defined earlier in this paper. The design of carbon credit systems, including baselines, crediting periods, permanence, and other issues, varies widely across voluntary and government regulated systems. The design reflects the views of different stakeholders, desired policy outcomes in government systems, data availability, and climate science, among other factors. There is no standard approach to carbon credit design, although the Integrity Council for

Voluntary Carbon Markets<sup>26</sup> is a new governance body that has emerged to set and enforce quality standards for the voluntary carbon market and is expected to establish guidance later in 2022. In a manner analogous to our policies on forest certification, New Forests manages supply-side integrity through use of only certain carbon credit standards and integration of policies on carbon credit quality in our Social and Environmental Management System.

#### **Demand-side Integrity**

Companies in various sectors, including oil and gas, information technology, pharmaceutical and others, that have undertaken voluntary net-zero commitments are increasingly interested in purchasing carbon credits. This has led some investors to query, based on demand-side integrity, whether particular companies or certain sectors should be allowed to purchase carbon credits from a fund in which the investor may be exposed to, given credibility of climate action and/or reputation risk. New Forests believes credible climate action can be supported through integration of demand-side integrity policies into carbon asset management. New Forests has published a Position Statement on Carbon Credits Integrity that may help inform investors' understanding of how to approach these issues.<sup>27</sup>

## Stakeholder Context

Rising carbon prices are creating substantial changes in land use in certain parts of the world. Change in land use can be complex and politically challenging particularly when farming, production forestry, conservation, and climate action interests are competing in the landscape. In New Zealand for instance, planting of permanent pine and redwood plantations (permanent meaning no timber harvest) for fast production of New Zealand Units (NZU), the government-regulated carbon credit, is becoming increasingly commercially attractive with the rising NZU price. Some farmers' groups are anti-pine plantation, arguing that it is removing land from productive use;<sup>28</sup> others view pine as an exotic monoculture and argue that the New Zealand Emissions Trading System should incentivise planting of native species.

Demonstrating another perspective, in Australia the current federal government has proposed to restrain the amount of permanent native ecosystem restoration that could occur on farms for purpose of generating Australian Carbon Credit Units (ACCU), in order to limit perceived adverse effects on farming,<sup>29</sup> while at the same time the government is supporting expansion of soil carbon and plantation forestry carbon credit project types.<sup>30</sup>

To address such concerns, New Forests believes investment strategy must integrate multiple community needs. By directing investment toward highquality carbon credit projects that integrate conservation and biodiversity outcomes with sustainable forestry and agricultural production, New Forests believes investors can make a significant contribution to addressing climate change, protecting and restoring nature, and supporting rural livelihoods.

26 Integrity Council for Voluntary Carbon Markets, https://icvcm.org/.

<sup>27</sup> Carbon Credits Integrity: New Forests' Position Statement, <u>https://newforests.com.au/wp-content/uploads/2021/12/NWF\_-301817\_Carbon-Credits-Integrity\_WEB.pdf</u>.

<sup>28 &</sup>quot;Report calls for urgent changes to control carbon farm conversions," <u>https://www.stuff.co.nz/business/farming/agribusiness/127764631/</u> report-calls-for-urgent-changes-to-control-carbon-farm-conversions.

<sup>29 &</sup>quot;Farmers and industry split on proposed federal veto power for forest regeneration projects," <u>https://www.theguardian.com/australia-news/2021/dec/14/farmers-industry-split-on-proposed-federal-veto-power-for-forest-regeneration-projects</u>.

<sup>30 &</sup>quot;Taylor fast-tracks use of green carbon credits," <u>https://www.afr.com/policy/energy-and-climate/taylor-fast-tracks-use-of-green-carbon-credits-20210625-p584b3</u>.

# Shaping Investment Strategy

The rising economic and environmental importance of NCS is leading to new investment opportunities and increasing optionality around the management of land-based assets.

How investors choose to manage carbon as an asset depends on its purpose to the investor. The purpose of that carbon asset will determine investment strategy and how investors allocate capital to the forest and land asset class and carbon markets.

From conversations with investors in recent months about carbon asset value, New Forests believes it is important for investors to start shaping their asset allocation purpose. Key questions that will influence investment strategy include:

- How does the investor value the climate impact benefits of forestry and land assets, and how do these benefits influence portfolio allocation?
- Does the investor want to utilise the carbon asset for their own portfolio decarbonisation objectives versus selling and transferring the property right to that carbon asset to a third party, where feasible, to generate financial returns?
- Is the investor prepared to apply a shadow price of carbon for removals to be held on their GHG balance sheet?
- What is the investor's forward view on carbon pricing in various government-regulated and voluntary markets? How will that forward view shape the investor's understanding of expected returns in forestry and land use?
- What regulatory and/or industry standard does the investor operate under, and how do its requirements influence investment strategy and the investor's path to net zero?

Increasingly these are critical questions. Climate change policy and GHG emissions trading systems in major agricultural economies are already creating value for carbon sequestration in forests. Rising carbon prices are driving new investment decisions in forestry and in land management—with more value and expected investment return shifting to activities that increase carbon sequestration. As the price of carbon rises, land use shifts from grazing, crop production, and lower value forestry toward longer forestry rotations, new plantation establishment, regenerative agricultural practices, and ecosystem restoration. The tipping point among these land uses can be sudden, and cash flows associated with increased carbon sequestration increasingly become capitalised into land values. Figure 8 is illustrative of these tipping points in land use against rising carbon price. In reality, nature conservation must be balanced with food and timber production and other land uses to meet all of society's economic, environmental, and cultural needs.

#### **Shaping Investment Strategy**



### Figure 8 - Illustrative Pathway of Land Use Change with Rising Carbon Price

Transition in land use from production to nature conservation

Examples of the sustainable land use transition linked to carbon pricing in New Forests' portfolio

The **New Zealand carbon market** provides opportunities to increase cash flows to typical 25-30-year rotations in New Zealand and increase IRR for greenfield projects by approximately 400 to 600 bps over a timber-only return and also creates opportunities for biodiversity-rich ecosystem restoration.

**Rising ACCU pricing in Australia** is creating new value for existing forestry investments and creating new opportunities for greenfield development and restoration. Generating ACCUs from moving from short- to long-rotation forestry could incrementally add 75 to 125 basis points to the timber-only investment return. Opportunities for greenfield plantation development and ecosystem restoration are growing with rising ACCU pricing but are challenged by rising land prices for agricultural production.

New Forests' **US carbon forestry strategy** on average seeks to generate 200 to 400 basis points of additional return above a timber-only return through optimised management of timber and carbon for the California carbon market including both through the protection of mature forests and the enhancement of biological growth.

**Tropical forests and landscapes** will play a critical part in addressing climate change. In fact, most of the reforestation required to meet Paris Agreement targets will take place in tropical regions of the world. Managing carbon asset value via the voluntary carbon market is a critical aspect of New Forests' sustainable forestry investment strategies in Southeast Asia and Africa, particularly Afforestation/Reforestation, Improved Forest Management, and Reduced Emissions from Deforestation and Degradation.

New investment models and strategies in forestry and land use are emerging as investors look at NCS as part of portfolio decarbonisation and as a new investment opportunity. While investment in activities associated with NCS can be pursued from a variety of asset allocations within an institutional portfolio, from a real assets perspective New Forests sees three strategies particularly emerging, as shown in Figure 9: (i) integration of carbon credits into commercial forestry investment strategies to generate higher incremental returns; (ii) investment into forestry assets primarily for climate change mitigation value; and (iii) project financing for carbon credit projects on third-party land. Which model and strategy an investor pursues is highly dependent upon the answers to the key questions at the top of this section and decisions related to land and carbon asset ownership and tolerance to carbon price exposure. Shaping Investment Strategy





#### Shaping Investment Strategy

Maximising returns and climate change mitigation benefits from forestry and land assets requires understanding of GHG accounting, carbon credit project development, and how carbon pricing will impact land use competition and pricing dynamics. New Forests is working with our clients to help them understand how to incorporate returns from carbon cash flows into asset valuation, which may have a different risk profile and other attributes relative to traditional revenue streams such as timber sales, land leasing, or agricultural commodity sales. The changing nature of returns requires an understanding of the carbon policy and stakeholder environment and long-term views on land use optimisation.

As reflected in the models in Figure 9, New Forests is increasingly seeing investors who are exploring the ways in which they can benefit from carbon:

 Taking a portion of their investment returns as carbon credits through sale to third parties in the relevant market;

- Directly acquiring the carbon credits that may be generated from assets in which they have a shareholding through a negotiated price mechanism; or
- Forgoing the sale of carbon credits in order to claim the removals-related climate benefits on the GHG balance sheet of the fund and apply them toward an investor's portfolio decarbonisation objectives.

These different approaches have various implications that must be managed, particularly in instances where multiple investors are in commingled funds with joint ownership of assets, including managing conflicts of interest, carbon price benchmarking, and other issues. For instance, if carbon credits are not sold in order to retain climate benefits on the fund's GHG balance sheet, investors would need to be comfortable trading off potential financial value to gain the value of the climate benefits. Furthermore, investors would need to ensure that their fund managers are financially aligned with a strategy to forego monetisation of carbon credits.

As sophistication around these issues grows, there will likely be divergent views among investors about claiming removals via GHG accounting as opposed to realising that value through the sale of carbon credits. This divergence of views would require an investment policy that creates an equitable outcome among investors. Theoretically, third-party audited GHG accounts could be unitised pro-rata to the ownership in a fund and bought and sold among investors through the application of a shadow price of carbon, although there would be a variety of tax and legal issues to be resolved.

New Forests is working to increase the sophistication of our GHG accounting in anticipation of the new GHG Protocol guidance on removals and working with our clients to understand the investment implications of different approaches to managing their carbon asset value.



# Conclusions

Assuming a robust policy environment and carbon pricing, hundreds of billions of dollars could flow annually into forest conservation, reforestation, and sustainable land management outcomes in commercial agriculture and forestry. Carbon asset value in land use could be trillions of dollars in 2030 and beyond, which would be capitalised into land and forest values.

A world in which the carbon price reaches \$100 per tonne could see substantial areas of forests and land valued primarily for their conservation value. Growing optionality for land between production and conservation would need to be balanced to ensure multiple objectives for climate mitigation, biodiversity protection, and food security are balanced.

Comprehensive, standardised and transparent reporting of the climate impact of land use and removals through GHG accounting is expected to drive more investment into Natural Climate Solutions as part of the global net zero transition. The climate change mitigation value of forests and land use will be reflected across the value chain, from carbon storage in forests to harvested wood products. While on the horizon, there is already work being done to account for the positive climate impact of substituting timber products for higher embodied energy products like cement and steel.

GHG accounting and carbon markets offer investors the opportunity to quantify and value the climate change mitigation value of Natural Climate Solutions. The ultimate result should be enhanced financial returns alongside climate action and nature action. The emerging GHG accounting frameworks and rising carbon markets will support investment into sustainable forestry and land use and ensure that these assets are making a meaningful contribution to the transition to a sustainable future.

New Forests recommends that investors start viewing management of landscapes for multiple values including sustainable production of timber and agricultural products integrated with forest conservation, reforestation and ecosystem restoration. This new view of integrated landscape management will require reallocation of capital and dynamic re-optimisation of returns linked to climate impact and portfolio decarbonisation.

As a next step, New Forests invites investors to consider the critical questions that will shape investment strategy as outlined in this paper. We welcome a conversation with you on the complex and evolving market and policy environment surrounding Natural Climate Solutions, net zero, and investment opportunities aligned with your portfolio decarbonisation objectives.





# About New Forests

New Forests is a global investment manager of nature-based real assets and natural capital strategies, with AUD 7.7 billion (USD 5.7 billion) in assets under management across 1.1 million hectares (2.6 million acres) of investments. We manage a diversified portfolio of sustainable timber plantations and conservation areas, carbon and conservation finance projects, agriculture, timber processing and infrastructure. We aim to generate shared prosperity for our clients and the communities in which we operate and accelerate the transition to a sustainable future.

New Forests' vision is to see investment in land use and forestry as central to the transition to a sustainable future. To achieve this vision, New Forests' investment strategies support the role of forests as nature-based solutions, provide sustainable wood fibre for the growing circular bioeconomy, and contribute to the sustainable development of regional economies and rural communities. Headquartered in Sydney, New Forests is a Certified B Corp and operates in Australia, New Zealand, Southeast Asia, Africa and the United States. For more information, please visit: www.newforests.com.au.



#### Important Note

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