

Nature as a critical climate solution.

Busting the myths surrounding
nature-based solutions



Nature
4Climate

Acknowledgments and disclaimer

Thanks to:

Peter Ellis

Kelley Hamrick

Ed Hewitt

Ilsa Ruiz Hughes

Beatriz Machado Granziera

Ayla Norris Smith

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Glossary

Nature-based solutions (NBS)	Nature-based solutions are actions that protect, sustainably manage, and restore natural and modified ecosystems to address societal challenges. They can provide long-term positive benefits that flow from healthy ecosystems and target significant challenges by providing climate change mitigation, disaster risk reduction, food and water security, and improved health outcomes.
Natural climate solutions (NCS)	Natural climate solutions are a subset of nature-based solutions. NCS are deliberate activities that protect, restore, and improve management of forests, wetlands, grasslands, oceans, and agricultural lands to mitigate climate change. NCS are constrained to a) have no net negative impact on food and fibre supply, b) result in no net harm to biodiversity, and c) ensure actions are implemented in “socially and culturally responsible ways”. A natural climate solution is a nature-based solution that affects human stewardship of ecosystems and directly addresses the climate crisis by delivering measurable climate mitigation.
Net zero	The IPCC provides a clear definition of global net zero: net-zero emissions are reached when anthropogenic (i.e., human-caused) emissions of greenhouse gases (GHG) to the atmosphere are balanced by anthropogenic removals over a specified period.
Nature positive	The nature-positive movement is underpinned by the Global Goal for Nature , and complements the global net-zero target. It aims to halt and reverse nature loss (measured from a baseline of 2020) through increasing the health, abundance, diversity and resilience of species, populations and ecosystems so that by 2030 nature is visibly and measurably on the path of recovery. According to the Global Goal, by 2050, nature must recover so that thriving ecosystems and nature-based solutions continue to support future generations and the diversity of life, while playing a critical role in halting runaway climate change.
Carbon credits	A carbon credit represents either the permanent removal of a tonne of CO ₂ from the atmosphere, or the avoidance of one tonne of CO ₂ being emitted, through changes in land use or energy generation. Carbon credits can also refer to the equivalent volume of other greenhouse gases (GHGs) and, in these scenarios, are communicated using CO ₂ e.
Carbon markets	Carbon markets are trading systems in which carbon credits are sold and bought. There are broadly two types of carbon markets: compliance and voluntary.
Voluntary Carbon Market (VCM)	The issuance, buying and selling of carbon credits on a voluntary basis. The current supply of voluntary carbon credits comes mostly from private entities that develop carbon projects certified by carbon standards that generate emission reductions and/or removals. Demand comes from private individuals who want to compensate for their carbon footprint, corporations with corporate sustainability targets, and other actors aiming to trade credits at a higher price to make a profit.
Removals and reductions	<p>Carbon credits can be generated from two types of activities, GHG reductions and removals.</p> <p>A reduction credit represents a tonne of CO₂e that has been prevented from entering the atmosphere. When used to counterbalance or offset, it is important to note that a new tonne of carbon is still in the air. Reductions are critical for limiting the increase in atmospheric GHG concentrations - but do not affect current GHG concentration levels.</p> <p>A removal credit represents a tonne of CO₂e that has been removed from the atmosphere. Removals are critical for building the long-term removal capacity (the global carbon sink) needed to reach net-zero targets.</p>

Foreword

It is well documented by social psychologists that humans have a ‘negativity bias’. This bias is the highly prevalent human tendency for negative information and experiences to overwhelm the positive – and goes a long way to explaining why we felt the need to publish this report.

The science is clear: we cannot achieve the Paris Agreement’s global climate goals without harnessing the power of nature-based solutions (NbS) for both climate mitigation and adaptation. Since we began in 2017, the Nature4Climate coalition has been working collectively to campaign for government and private sector action to protect, manage and restore nature to help address the twin crises of climate change and biodiversity loss. Given the inherent positivity in that mission, you would think it unlikely that it would attract too much criticism. But you’d be wrong.

We know that nature is a critical climate solution, but high levels of disinformation are discrediting viable solutions and drastically slowing or even halting action. There has been a consistent and persistent drip-feed of negative sentiment and media coverage targeted at nature-based solutions to climate change. In some cases, projects and corporate approaches are deserving of such attacks – and of course, scrutiny across the board is always welcome. But the effect of blanket criticism and sensationalist headlines is counter productive. Why would

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we want to discourage companies, governments and individuals from investing in a nature-positive future?

We need nature-based solutions to provide up to a third of the mitigation required by 2030 in order to keep our global climate goals in reach. Investing in nature-based solutions will provide other valuable benefits and resiliency, such as the protection of ecosystems and biodiversity, increased resilience to climate impacts, provision of clean air and water, restoration of degraded lands and support for local sustainable livelihoods.

To overcome the prevailing misconceptions and promote an “and-and” narrative, Nature4Climate has put together this paper to bust the most-frequently cited myths around nature-based solutions and natural climate solutions.

The report examines each of the myths in turn as they often lead to misleading headlines such as ‘forests are no longer our climate friends’ and claims that forest carbon credits are ‘worthless’. This myth-busting approach tackles areas such as pitting technology and nature against each other; removals vs reductions; regenerative farming; corporate claims and greenwashing; and a whole section on nature-based carbon credits and the voluntary carbon market.

I hope that you will find the report useful. Our intention is to respond to the negative narrative with a positive approach – in the hope that decision-makers will continue to prioritise action and investment in nature-based solutions.

Lucy Almond
Chair, Nature4Climate

Introduction

The science is clear: we cannot achieve the global climate goals of the Paris Agreement to stay within a safe climate without harnessing the power of nature-based solutions (NbS) to drive both climate mitigation and adaptation. Indeed, up to a third of the mitigation strategies needed to keep these climate targets in reach must be provided by NbS by 2030¹. We cannot tackle the interrelated crises of climate change and nature loss – or achieve a net-zero and nature-positive future – without radically transforming the Agriculture, Forestry, and Other Land Use sector (AFOLU) – a sector which accounts for 22% of global greenhouse gas (GHG) emissions². Investments in all types of better land stewardship must be in addition to, not instead of, a transformation of the energy sector.

Nature and climate are intricately connected, and the crises of climate change and loss of biodiversity should be considered in tandem. Nature's degradation is contributing to global GHG emissions, undermining efforts to address climate change, whilst climate change is expected to become the biggest driver of biodiversity loss within this century³. The global stock of

natural capital (biodiversity and critical ecosystems) has declined to its lowest levels in human history, and this decline continues at an unprecedented rate^{4,5}.

Around the world, Indigenous Peoples and local communities (IPLCs) have long acted as stewards of their lands and waters, living in reciprocity with nature. With many Indigenous peoples dependent on nature for their well-being and livelihoods, they are the most vulnerable to climate change despite having contributed the least to global emissions. Any discussions about nature must therefore include the local communities whose lives depend on the ecosystems they live in and, in many cases, protect. Upholding the leadership and decision-making of these communities is critical for all of nature, including us, to thrive.

The loss of natural capital undermines nature's productivity and resilience, and could constitute a systemic risk to our economic security and financial stability. Failing to stop and reverse nature and biodiversity loss will mean failing on our economy, sustainable development, climate, security, and human health.

Nature and the goods and services we derive from it (including climate change mitigation and adaptation) deliver significant value to the global economy. By one estimate, \$58 trillion of economic value generation – over half of global GDP – is moderately or highly dependent on the ecosystem services that nature provides⁶. More than half of the market capitalisation listed on 19 of the world's largest stock exchanges is exposed to material nature risks. 100% of the economic value generated by the direct operations of the agricultural, forestry, fisheries and aquaculture, food and beverage, and the construction industries are highly dependent on nature, leaving them vulnerable to ecosystem disruptions that could materially reduce financial returns. Together these five industries produce \$13 trillion in economic value⁷.

Redirecting financial flows to become nature positive, including investment in nature-based solutions, is crucial if we are to restore valuable ecosystems, protect biodiversity and increase our resilience to the climate crisis. Moreover, financial investment enables the provision of clean air and water, the restoration of degraded lands and importantly, support for sustainable livelihoods.

Part 1 - Nature-based solutions

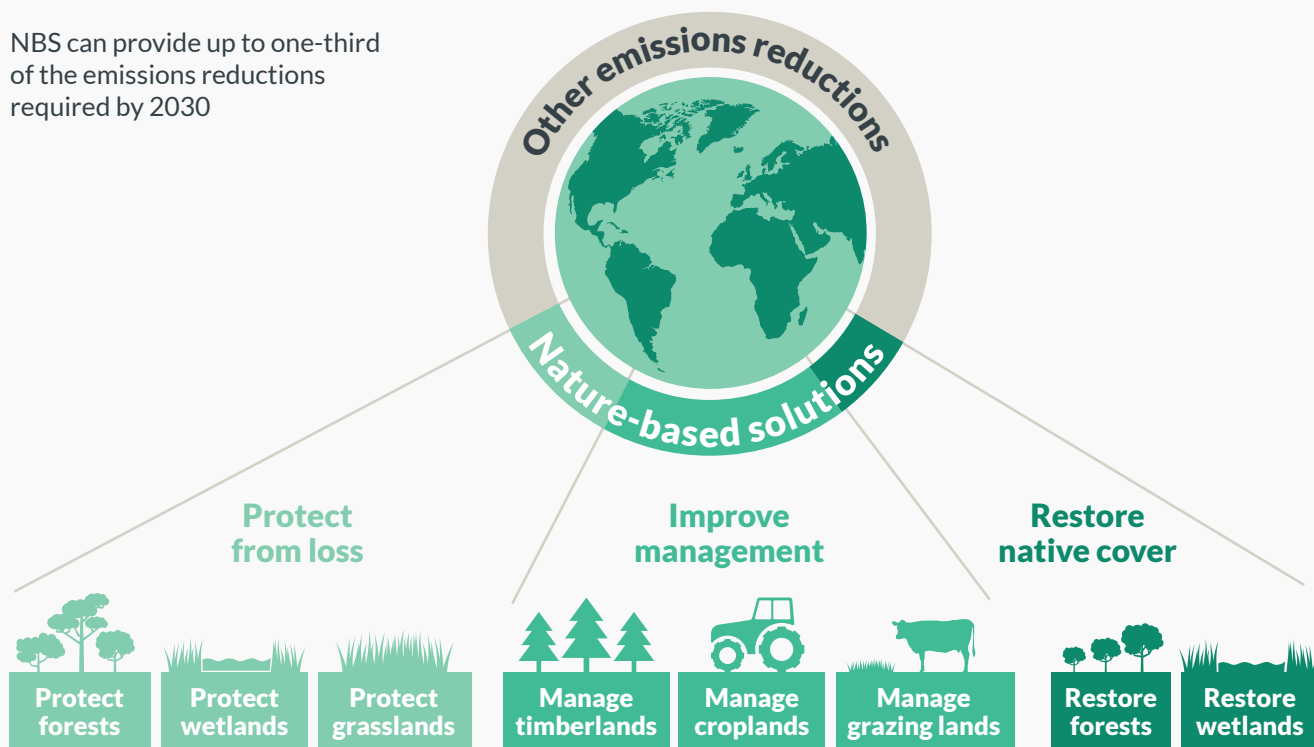
NbS are actions which protect, sustainably manage and restore natural ecosystems to address social, economic and environmental challenges while simultaneously bringing benefits for humans and biodiversity. It is important to stress that to be considered a NbS, the initiative needs to address societal benefits as well. Any effort that delivers climate benefits, but which harms human well-being or biodiversity is not a nature-based solution.

NbS are also an essential way to improve the resilience of societies to climate change, by providing ecosystem goods and services that support food

and financial security, by empowering local communities to manage natural resources, and to participate in the design, implementation and management of these solutions. Protecting and restoring natural forests and wetlands helps to retain water supplies, reduce flood risk and prevent soil erosion and landslides. Similarly, coastal ecosystems provide protection against sea-level rise, storm surges and erosion, while offering critical habitat for marine species. Improved agricultural practices such as crop diversification can enhance resilience of food supplies to pests, diseases and climatic extremes.⁸

NbS are not to be confused with natural climate solutions (NCS). NCS are deliberate human activities that protect, restore and improve the management of forests, wetlands, grasslands, oceans and agricultural lands to mitigate climate change. To meet the definition of NCS, an activity must have no net negative impact on food and fibre supply, nor result in net harm to biodiversity. It also must be implemented in equitable and “socially and culturally responsible ways”, respecting human rights and the self-determination of Indigenous peoples and local communities.

NBS can provide up to one-third of the emissions reductions required by 2030



Source: <https://www.nature.org/en-us/what-we-do/our-insights/perspectives/natural-climate-solutions/>

NbS and NCS are not just for rural landscapes. There is a growing demand for NbS in urban areas to enhance our resilience to climate change. Urban NbS can help to regulate water, clean our air, reduce extreme temperatures and increase biodiversity within cities and urban areas.

For the purposes of this paper, the focus will primarily be upon NbS for climate, which support mitigation, adaptation and resilience. However, the division of climate and nature strategies is not black and white. The twin crises of nature loss and climate change are fundamentally intertwined, and restoring nature is critical in addressing a range of societal challenges, from food security to disaster risk and to reaching our global goals. Therefore, some adaptation strategies and non-climate metrics for nature have also been included where relevant. There are also many transformations that need to happen in the global economy that will ultimately be beneficial to nature – such as the development of clean energy and high-tech food production which requires less land expansion.

The challenge of misinformation

NbS hold massive potential for genuine, measurable climate and nature action, but there are significant inaccuracies and misinformation which discredit viable solutions and slow or halt action being taken. There is also a pervasive either/or message when discussing solutions, which often comes from advocates of certain solutions promoting their chosen action at the cost of others. Furthermore, this creates silos and a counterproductive us vs. them mentality. The truth is that the scale of the crisis is such that we need all the solutions we can throw at it.

This paper hopes to counter the prevailing misconceptions, promote an ‘and-and’ narrative, and bust the most-frequently cited NbS myths.



7 myths about nature-based solutions

Myth # 1 - NbS and carbon credits are the same thing so are subject to the same criticisms

“Carbon credits are currently a hotly debated topic, but aren’t NbS and carbon credits the same thing?”

NbS are a broad set of actions that protect, sustainably manage and restore natural ecosystems to address social, economic and environmental challenges. It is important to stress that NbS can simultaneously address societal challenges, including climate change mitigation and adaptation, natural disasters, human health, food and water security, and biodiversity loss.

NbS are also an essential way to improve the resilience of societies to climate change by providing ecosystem goods and services that support food and financial security. Local communities need to be empowered to manage natural resources and to participate in the design, implementation and management of these solutions for NbS to be effective. Protecting and restoring natural forests and wetlands helps to retain clean water supplies, reduce flood risk and prevent soil erosion and landslides. Similarly, coastal ecosystems provide protection against sea-level rise, storm surges and erosion while offering critical habitat for marine species. Improved agricultural practices such as crop diversification can enhance food supply resilience to pests, diseases and climatic extremes⁹.

What are nature-based solutions?

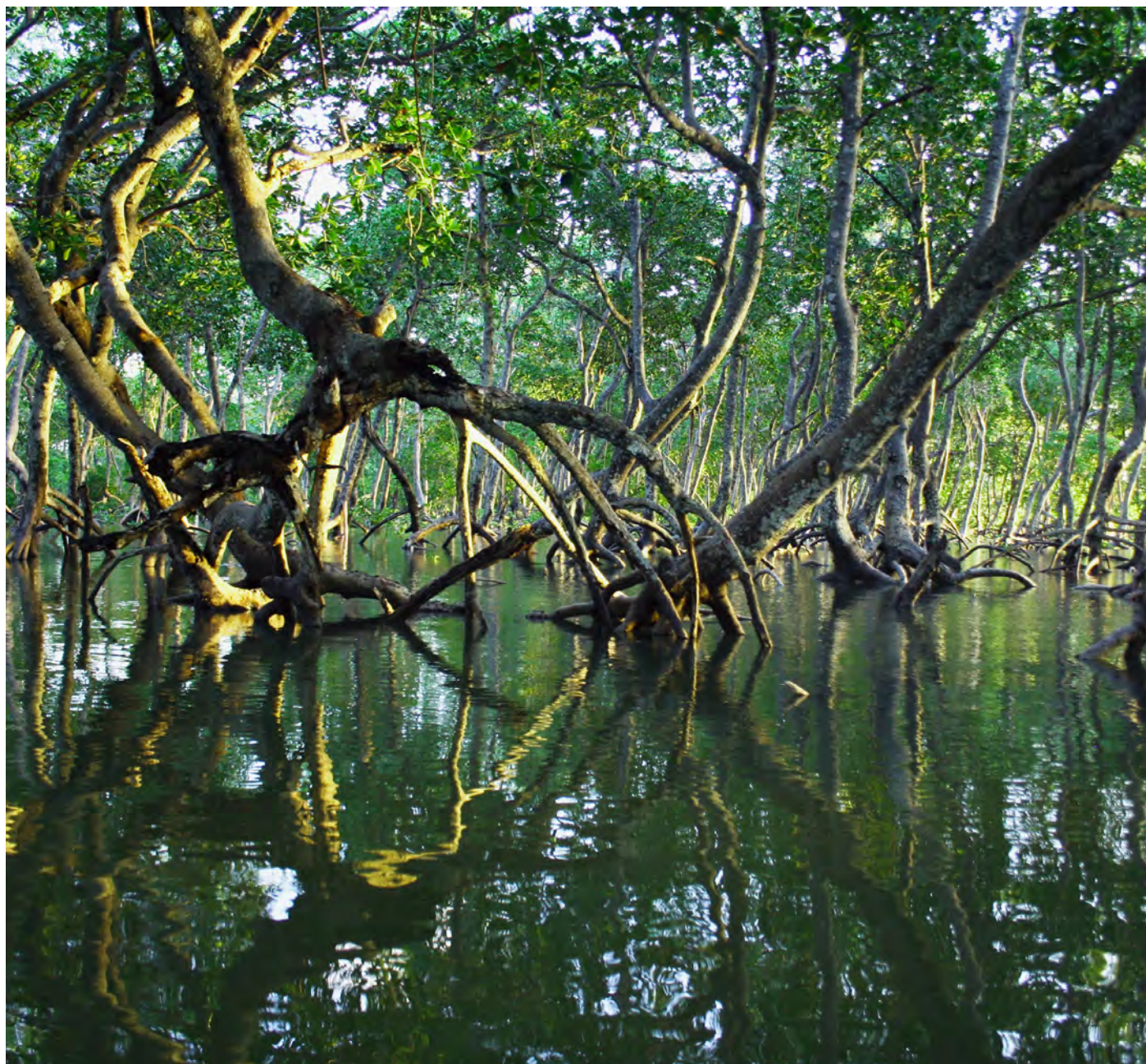


Source: <https://www.naturebasedsolutionsinitiative.org/what-are-nature-based-solutions>

In contrast, carbon credits are a quantifiable measurement of impact. One carbon credit represents one tonne of CO₂ emissions avoided or removed from the atmosphere. They can be used as part of a decarbonisation strategy where deep emissions cuts are being made in companies’ operations and enable ambitious action as part of beyond value chain mitigation.

Carbon credits can be categorised as nature-based carbon credits if they work with nature to avoid emissions or remove carbon emissions from the atmosphere. Examples of nature-based carbon credits include credits from forest protection projects, reforestation projects, blue carbon projects (e.g. mangrove or seagrass) and regenerative agriculture projects.

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With global publications calling into question the ability of carbon projects to produce credits with credible baselines and that uphold human rights, trust in the market has been compromised. While there are some instances where these allegations hold true, there are a considerably higher number of projects that have successfully channelled critical climate finance directly to frontline communities,

supporting their efforts to implement high-quality carbon projects. See myth 4 in part 2 of this paper for more information on the integrity of carbon credits. It is critical to address these concerns and the majority of the voluntary carbon market (VCM) actors welcome this increased scrutiny. A number of actors, from rating agencies to independent governance bodies and tech entrepreneurs, are developing

approaches to address this lack of trust and build transparency in the market.

Trust is essential for the VCM to realise its potential of mobilising, at speed and scale, billions of dollars a year in additional climate finance that removes carbon or cuts emissions, helping the world to meet the goals of the Paris Agreement, while benefitting communities and ecosystems more broadly.

Myth # 2 - Government and philanthropy are the only way to fund NbS

“The role of governments is to address global challenges like climate change, so they should be responsible for funding climate action. And if there’s not enough money, then surely philanthropy can fill that gap?”

Public and private investment to protect, manage and restore nature is growing, particularly as a result of climate mitigation and adaptation efforts. However, investments in NbS need to double by 2025 from the current \$154 billion and triple by 2030¹⁰ in order to reach our net-zero and nature goals. It is estimated that some \$200 billion of additional investment needs to be mobilised towards the protection and restoration of nature globally.

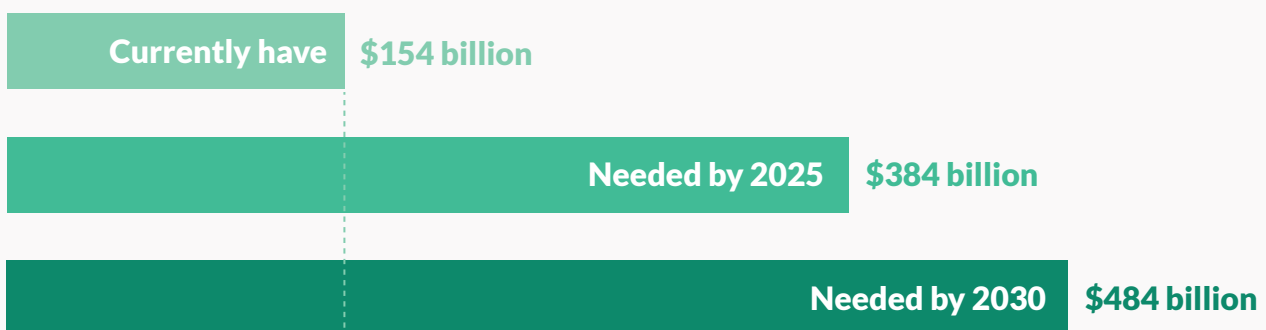
One study found that less than 10% of funding for climate adaptation in least-developed nations went into projects that harnessed nature¹¹. Currently land use receives less than 5% of public international climate mitigation dollars¹². Of the private investment in climate action from green bond issuances, 81% is invested in energy and transport, while land use only attracts 4%¹³.

We have seen the renewable energy industry soar as a result of increased investment, employing more than 12 million people worldwide in 2021¹⁴. A similar focus on land-use solutions might unleash its own economic boom. In 2022 investment in clean energy topped \$1.3 trillion¹⁵, while investments in NbS currently stands at approximately \$154 billion¹⁶. This signifies an additional investment opportunity in NbS, which is often

economically beneficial for sectors like forestry or agriculture, while more work will be needed to identify attractive commercial opportunities and incentivise capital toward national level priorities.

Currently government expenditure on price-distorting and environmentally harmful subsidies to fisheries, agriculture and fossil fuels is estimated to be between \$500 billion - 1 trillion per year, three to seven times greater than public and private investments in NbS. These flows severely undermine efforts to achieve critical environmental targets. While robust evidence is lacking, it is widely recognised that private financial flows are predominantly negative for nature and almost certainly exacerbate the situation¹⁷.

Financing for nature-based solutions (NbS)



Source: <https://www.unep.org/resources/state-finance-nature-2022>

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Until we are able to consistently create a value for the protection and restoration of nature that outcompetes the value of destroying it, progress will be slow and difficult. Financing for natural climate solutions is starting to flow. Finance from the UN-REDD Programme and Forest Carbon Partnership Facility readiness funds have supported countries to develop REDD programmes, while the Green Climate Fund, the LEAF Coalition¹⁸, the Forest Carbon Partnership Facility's Carbon Fund, green bonds and nationally-funded policy are financing the development of results-based activities. The development of biodiversity credits could provide substantial opportunities to finance the protection of our natural resources while mitigating the risk and adapting to the impacts of climate change. However, substantial demand will have to be established, as well as an understanding of how they differ from nature-based carbon credits.

The fact is that development assistance and conservation funding are never going to be enough on their own. We need more funding

to close that \$200 billion nature finance gap, therefore the private sector must scale up its commitment.

Indeed, it will be almost impossible to meet our climate goals without public and private companies investing beyond their value chains to protect, manage and restore nature on the pathway to net zero and nature positive¹⁹. By investing in NbS as a way to meet their carbon and nature commitments, funding from companies can help to fill the gap. A large part of this work is directly around supply chains and finding ways to make commercially viable, private sector-led operations part of the solution.

Natural capital

Glasgow's COP26 in 2021 demonstrated that natural capital is an investable proposition, and we saw the launch of multiple initiatives to bring such investments to scale – with more than \$7.2 billion of private sector finance mobilised to support forest positive investments, and over \$20 million in public, private

and philanthropic commitments to increase ocean resilience. This money is now starting to flow, with \$2.67 billion already being contributed towards forest-related programmes in developing countries. This equates to 22% of the \$12 billion pledged at COP26 and means that donors are on track to deliver by 2025. While more is needed, especially on recognising and rewarding the crucial role IPLCs have in forest protection, this is an encouraging sign of progress.

Commitments from the Innovative Finance for the Amazon, Cerrado and Chaco (IFACC) initiative have risen from \$3 billion to \$4.3 billion and disbursements are expected to exceed \$200 million this year. Similarly, the public-private LEAF Coalition has mobilised an additional \$500 million in private finance, bringing a total of \$1.5 billion in support of tropical forest protection. This is part of \$3.6 billion of new private finance announced at COP27. However, this needs to increase further if we are to protect and restore natural capital and unlock new markets.

Private sector finance

Agriculture, forestry and other land use contributes 22% to global emissions – around half of that (11%) is from deforestation and land conversion.

To avoid the worst impacts of climate change, the majority of commodity-driven deforestation and land clearance must end by 2025 and deforestation must end this decade. However, 93% of major forest, land and agriculture companies that have committed to net zero could miss their commitments due to a lack of action on deforestation²⁰.

Those that are engaging now are not only building resilience into their portfolio but capitalising on the emerging opportunities. What once seemed unreasonable will, sooner than most imagine, become core investment opportunities. The investor mantra should be “act now and prepare for much more”²¹.

Direct and indirect emissions by sector (59 GtCO₂-eq)

Direct		Indirect		Direct		Indirect		Direct		Indirect	
Buildings 16%		Transport 15%		Agriculture, forestry and other land use 22%		Industry 34%		Other energy 12%			
Non-CO ₂ (all buildings) 0.1%		Inland shipping 0.3%		Biomass burning (CO ₂ , CH ₄) 0.1%		Cement (process only) 2.6%		Petroleum refining 1.1%			
Non-residential 5.9%		Rail 0.4%		Synthetic fertiliser application (N ₂ O) 0.75%		Waste 3.9%		Coal mining fugitive emissions 2.2%			
Residential 11%		Domestic aviation 0.7%		Manure management (N ₂ O, CH ₄) 0.7%		Chemicals 6.3%		Oil and gas fugitive emissions 4.4%			
		Other (transport) 0.9%		Rice cultivation (CH ₄) 1.7%		Metals 7.8%		Other (energy systems) 4.7%			
		International aviation 1.1%		Managed soils and pasture (CO ₂ , N ₂ O) 2.5%		Other (industry) 13%					
		International shipping 1.3%		Enteric fermentation (CH ₄) 5%							
		Road 10%		LULUCF CO ₂ 11%							

<https://www.ipcc.ch/report/ar6/wg3/>

Carbon markets

Carbon markets are one of the few tools we currently have to effectively channel finance to NbS. However, carbon markets currently contribute just 1% (\$2 billion) of the \$154 billion currently being invested to NbS²² while public financial flows contribute 83% of all finance to NbS²³.

This small market share suggests that investments in carbon markets are perceived to have high risks and lack sufficient predictable, long-term revenue streams, deterring investors. This perception is starting to change and interest in the VCM is

growing rapidly with the value of the market increasing from just \$282.3 million in 2019²⁴ to reaching \$2 billion in 2021.

In many cases, the VCM effectively delivers significant revenues to IPLCs who are managing vast carbon sinks. In Kenya, local communities have earned **\$14.6 million** from the world’s largest soil carbon project, while in Zambia **\$9.2 million** has been channelled to local communities who are protecting their forests using REDD. However, markets should not be the only answer for how to increase finance for NbS.

If we are to quadruple investments in NbS by 2050, the private sector needs to strengthen its commitment to NbS. While the VCM is an important part of the solution, we cannot rely on growing carbon markets alone to fund NbS. We must support further investments in sustainable supply chains, payments for ecosystem services and impact investing.

New financing mechanisms for carbon and other ecosystem service payments are emerging, some accessing mainstream capital markets on a sizable scale.

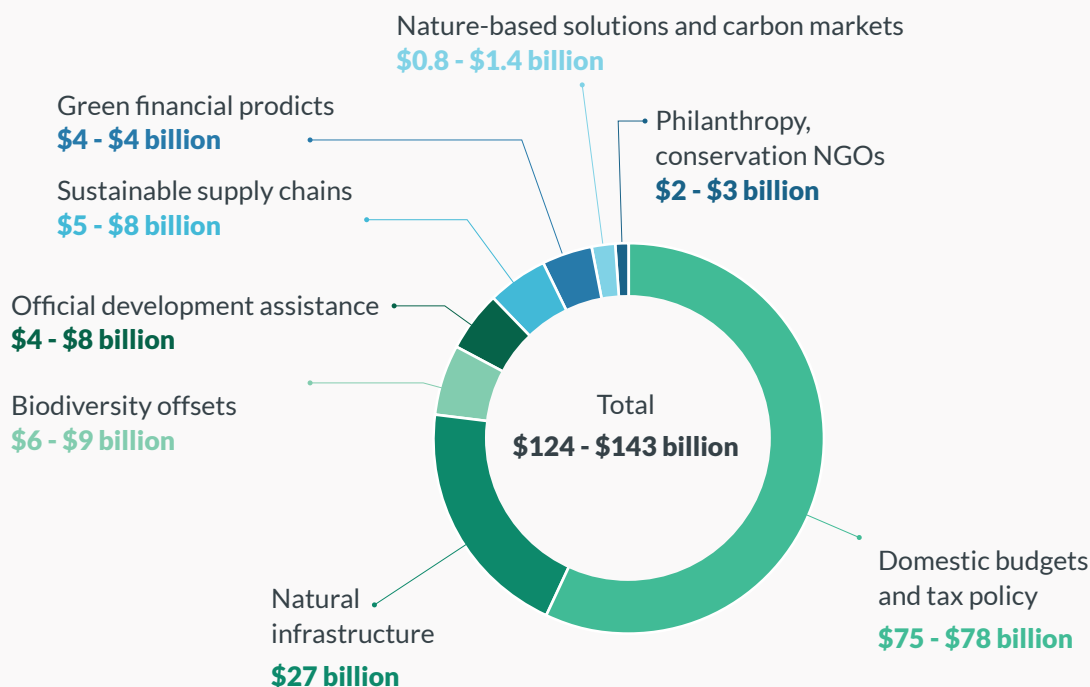
- Results-based payments for tropical forest protection and restoration are starting to flow from corporations supporting projects as part of their net-zero commitments.
- The LEAF Coalition is the largest fund for REDD using private funds from corporations.
- Poland issued the first green bond in 2016 – a \$750 million issue –

which included investments in afforestation, forest maintenance and sustainable agriculture.

- New financial instruments, for example Sustainable Land Bonds and climate adaptation debt conversion deals. The Nature Conservancy (TNC) and the Seychelles government closed the first climate adaptation debt conversion deal for \$21.6 million in 2016. While in 2021, TNC and Belize completed a \$362 million debt conversion resulting in the protection of 30% of Belize’s ocean and reducing their debt by 12%.

Private sector investment into nature-positive activities is a major opportunity. The investment industry seeks returns as its primary objective, and today some of the most convincing opportunities for growth and returns come from a transition to a more sustainable economic model, that both harnesses and preserves nature. As can be seen with the energy transition, the opportunities for investment in clean and positive activities and technologies are abundant.

Global biodiversity conservation financing in 2019: summary of financial flows into biodiversity conservation (in 2019 \$ billions per year)



Source: https://www.nature.org/content/dam/tnc/nature/en/documents/FINANCINGNATURE_ForewordExecutiveSummary_091420.pdf

Myth # 3 - There isn't enough space in the world to plant all the trees required

“There isn't enough space to plant all the trees that we need to help us mitigate climate change, reach net zero and provide food and fuel.”

Globally there is the potential for 4.4 billion hectares of canopy cover under the current climate. Excluding existing trees and agricultural and urban areas, there is enough space for an extra 0.9 billion hectares of canopy cover which could store 205 gigatonnes of carbon in areas that would naturally support woodlands and forests²⁵.

Tree growing

Planting trees for climate and biodiversity goals is not as simple as blanketing the earth with trees. In some instances, planting the wrong trees in the wrong places can undermine climate mitigation, biodiversity or the Sustainable

Development Goals. In some places, there are competing uses for land that are better options. In others, the best and cheapest option is to let forests naturally regenerate²⁶.

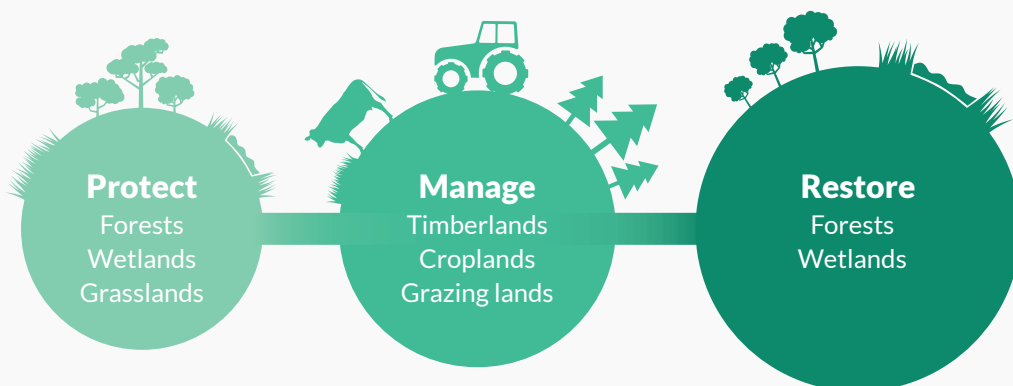
It is important that the right trees are planted in the right places. There is space on our planet for 1 trillion trees without encroaching on agricultural land²⁷, but tree growing should not be done by replacing other ecosystems or in a way that threatens our food security. Ideally we need to restore forests where they have traditionally grown, taking care to plant a diversity of native species to encourage an increase in biodiversity. Planting single species leaves trees vulnerable to disease and climate change.

Plantations are not all bad; we do need working, productive lands as we need more trees grown for low-carbon buildings to replace our dependence on concrete and cement. However,

our need for paper and timber must not be at the expense of deforesting primary forests, or other irreplaceable ecosystems like peat bog. Plantations must move beyond monocultures to become more diverse and resilient to pathogens and climate change and to become more beneficial to wildlife.

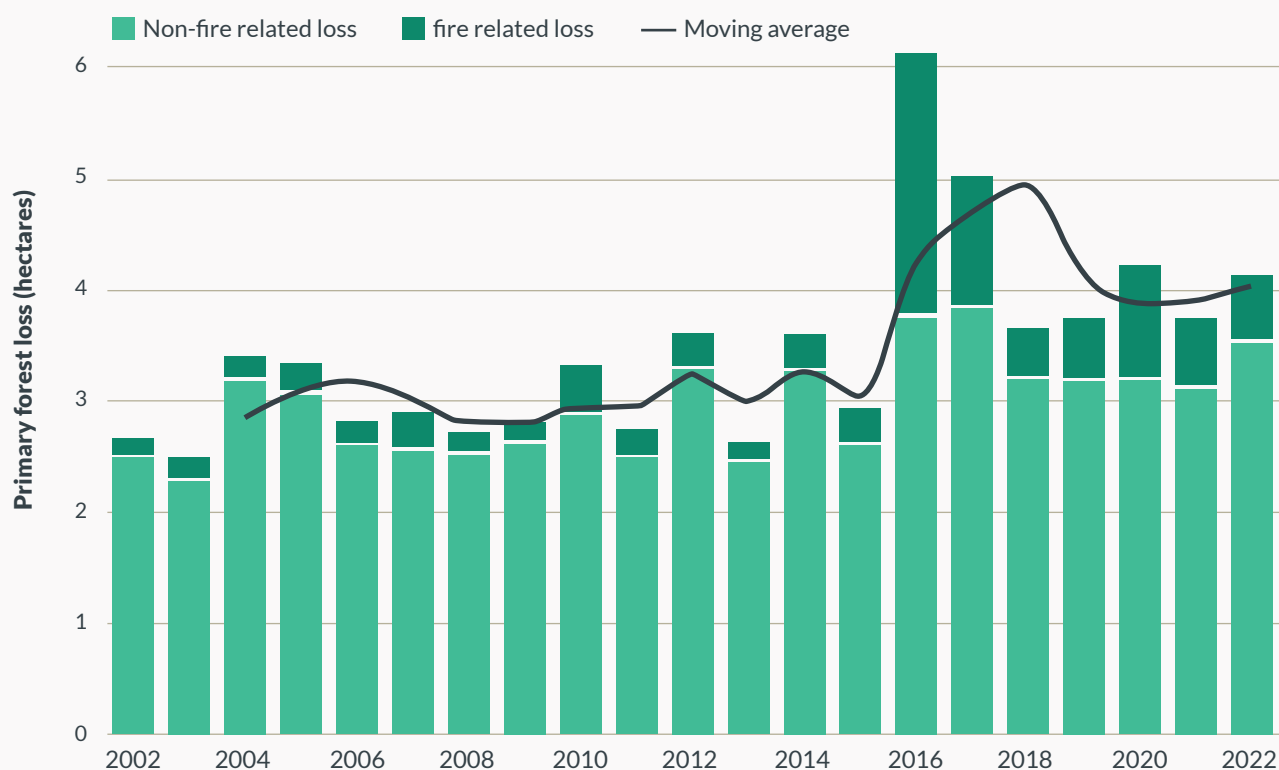
While tree growing is important as a way to implement large-scale ecosystem restoration, it is crucial to remember that we must also protect existing forests that are rich in biodiversity and home to more than 80% of all terrestrial species of animals, plants and insects²⁸. In fact, a 2021 paper²⁹ details the importance of following the hierarchy of protect, manage then restore. Intact ecosystems, in particular tropical forests, are irreplaceable over the short- or medium-term, providing not only climate and biodiversity benefits, but also homes and livelihoods for local communities.

Protect, manage and then restore lands for climate mitigation



Source: <https://www.nature.com/articles/s41558-021-01198-0>

Tropical primary forest loss, 2002-2022



Non-fire related loss can occur from mechanical clearing for agriculture and logging, as well as natural causes such as wind damage and river meandering. The three-year moving average may represent a more accurate picture of the data trends due to uncertainty in year-to-year comparisons. All figures calculated with a 30% minimum tree cover canopy density.

Source: <https://research.wri.org/gfr/latest-analysis-deforestation-trends>

Forest protection

Forest protection is a critical component in our fight against climate change and against the loss of biodiversity upon which human life depends. Stopping deforestation and degradation avoids emissions in addition to supporting the removal of atmospheric carbon that takes place through forest growth and restoration³⁰. Trees and forests are much more than just carbon removal tools – they stabilise the water and carbon cycles, improve soil quality and provide habitat for species we depend on for food and medicines. Forests support livelihoods and are a home for IPLCs. Of the world's 476 million indigenous people³¹, 60 million live in or depend on tropical rainforests for food, clothes, medicines and cultural identity³².

All IPCC scenarios involve halting and massively reversing deforestation³³. Reducing emissions from land-use change and the agriculture sector is integral to all pathways in which the world stabilises the climate to avoid catastrophe.

The international community has already set ambitious goals to protect and expand forests, yet tropical primary forest loss increased by 10% in 2022. Tropical primary forest loss totalled 4.1 million hectares producing 2.7 gigatonnes of CO₂ emission³⁴. The rate of forest loss remains too high to achieve the no-deforestation goal by 2030³⁵ and jeopardises efforts to tackle climate change.

A recent United Nations Environment Programme (UNEP) report found

that for the 2030 goals to remain within reach, a one gigatonne milestone of emissions reductions from forests must be achieved not later than 2025, and yearly after that³⁶. Governments can reduce deforestation rates significantly by enacting reduced deforestation policies and by prohibiting forest clearing. Indonesia's deforestation rate hit a historic low in 2020 of 115,459 hectares of forest cover, a 75% drop from 2019.

Forest protection and restoration must be done in a way that respects the rights of local communities and Indigenous peoples. To increase the success rate of tree planting and protection projects, the ownership, design and management of the project should be handed over to local communities.

© The Nature Conservancy



Forest and land management

Improving management practices on working lands can contribute to mitigating 5.1 gigatonnes of CO₂e globally³⁷.

It is no secret that trees are one of our greatest allies in the climate fight. By implementing climate-smart forestry, such as reduced impact logging and deferred harvest, a well-managed

forest has the potential to both avoid emissions and enhance carbon sequestration.

Agriculture land that is extensively used for crops or livestock can also be managed in a way that avoids GHG emissions and increases the carbon sequestered in soils. For example, GHG emissions can be avoided through implementing improved practices in rice cultivation, in adopting best practices to reduce the need for fertilisers, or by improving the management

of manure. Carbon sequestration can be improved by growing trees on agricultural land, by planting cover crops, by adopting reduced or no till practices or by optimising grazing cycles and animal feed³⁸.

To reach our climate and biodiversity targets with the land we have available, we must focus on protecting what remains of our forests – managing working land better and increasing forest growth through restoration and natural regeneration.

Myth # 4 - Regenerative farming is prohibitively expensive and won't make enough of a difference

“Regenerative farming sounds like a nice idea but how can we feed a growing population without our current farming practices that mass produce food?”

Agriculture, soils and our food systems are on the front-line of climate change and are being highly impacted. However, they are also responsible for about a quarter of global GHG emissions through deforestation and habitat conversion, livestock, soil carbon loss, and fertiliser use – not to mention high levels of non-CO₂ emissions.

Currently, land degradation has reduced productivity in 23% of the global terrestrial area, and between \$235 billion and \$577 billion in annual global crop output is at risk as a result of pollinator loss³⁹.

A collapse in ecosystem services, such as pollination and the provision of food, clean water and timber, could result in a significant decline in global GDP at an estimated \$2.7 trillion in 2030, with relative impacts most pronounced in low and lower middle-income countries, where drops in GDP could be more than 10% by 2030⁴⁰. Costs will mount over time if we fail to address the problem.

Firms at the centre of the global food supply system could lose up to 26% of their value by 2030 – equivalent to \$150 billion in losses – if investors and companies do not act now to protect value. On the other hand, a net-zero, nature-positive, resilient food system could generate up to \$4.5 trillion of new business opportunities annually by 2030⁴¹.

We cannot continue with farming practices that deplete our soils, degrade the environment and intensify the climate crisis.

Agriculture, soils and our food systems are responsible for about a quarter of global greenhouse gas emissions through:



Deforestation and habitat conversion



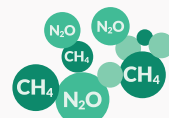
Livestock



Soil carbon loss



Fertiliser use



High levels of non-CO₂ emissions



23% of the global terrestrial area has reduced productivity due to land degradation



\$235 - \$577 bn

in annual global crop output is at risk as a result of pollinator loss

Global GDP could decline by **\$2.7 trillion** in 2030 due to a collapse in ecosystem services such as pollination, food, clean water and timber

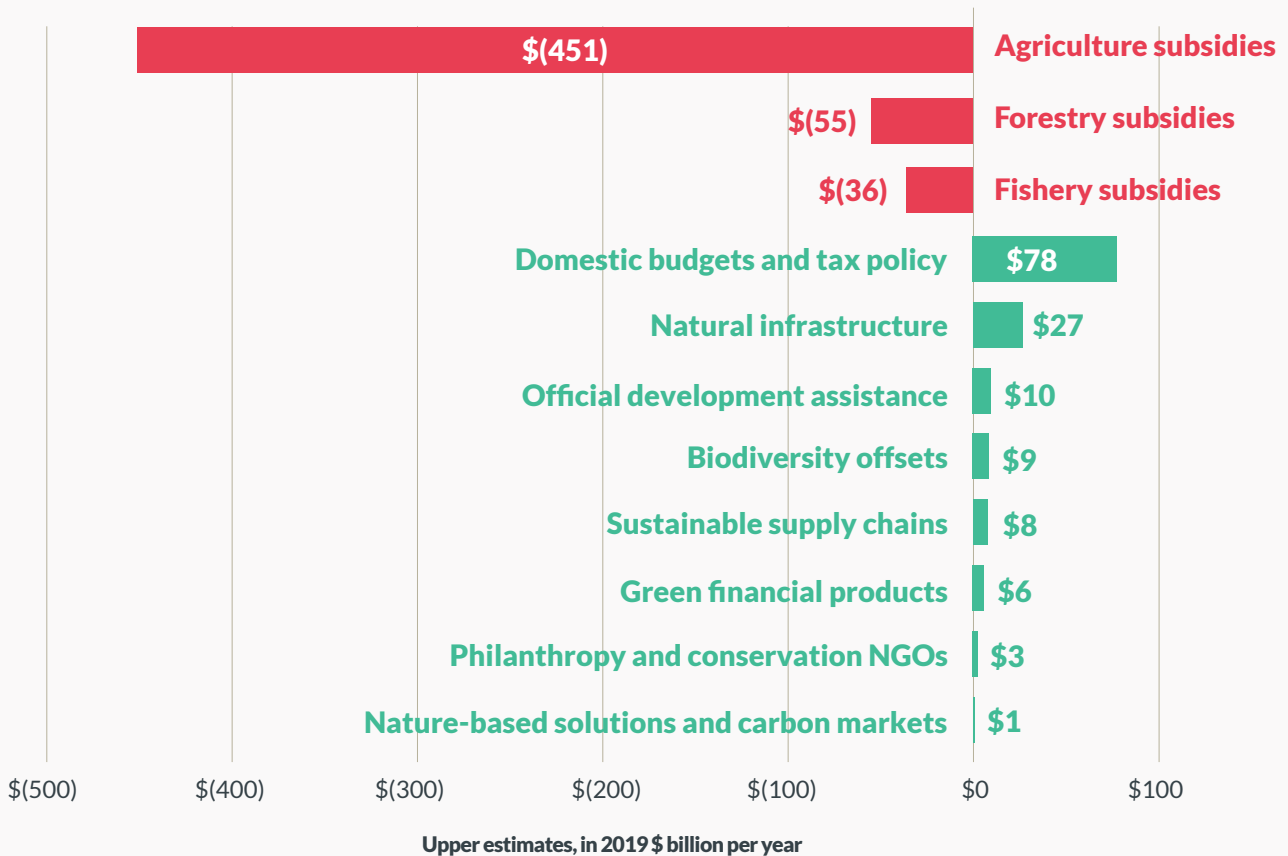
Subsidies

Worldwide, \$635 billion dollars' worth of agricultural subsidies are perpetuating unsustainable food and

land-use systems⁴², which are leading to environmental degradation, poor nutrition, and income inequality. Governments must reduce or eliminate harmful subsidies and

redirect them to contribute towards sustainable and regenerative agriculture and land-use practices.

Harmful subsidies and global financial flows towards biodiversity conservation.



Note: The estimates of agricultural, forestry, and fisheries harmful subsidies correspond to OECD's "potential biodiversity harmful" category of production subsidies. This graph excludes the estimated additional \$395–478 billion in fossil fuel production subsidies.

Source: https://www.nature.org/content/dam/tnc/nature/en/documents/FINANCINGNATURE_ForewordExecutiveSummary_091420.pdf

Minimising agricultural expansion

A growing world population increases demand for food, fibre and fuel, while key resources will be not only limited, but will decrease with climate change. The demand for more food can undermine claims for the deployment of natural climate solutions (and other climate solutions such as solar parks).

Climate change affects – and will continue to affect – how much and where we can grow. Who gets to produce what and where is a massive socio-political question, and is likely to become more controversial in the future as competition over land use continues to increase. The objective is to minimise the expansion of cropland, and eventually get us to a place where we can freeze our agricultural footprint by increasing yields (partly by protecting soil health) and through changes in demand for food.

In the private sector, there are now 810 companies that have made commitments to curb forest destruction in supply chains linked to the 'big four' agricultural commodities: palm, soy, timber and pulp, and cattle⁴³. At COP27, 14 of the world's largest agricultural commodity trading and processing companies released a 1.5 degree Celsius road map⁴⁴. This aims to accelerate existing action within their supply chains to halt commodity-linked deforestation in line with our climate aspirations.

We need more innovation to support decisions to reduce the amount of land converted to agriculture to the minimum necessary, which minimises GHG emissions to help farmers and ranchers improve land management practices.

Managing different land uses

The deployment of NbS requires managing trade-offs with other land-use requirements,

in particular food. This is no impediment to large-scale deployment. It is essential that we avoid the need to take any cropland out of production, but that the increase in crop yields will keep pace with population growth. In other words, we assume the area of cropland we need to feed people will stay the same – and with most arable land already in agriculture production, this is a reasonable assumption. At the national, regional and local levels, deployment of natural climate

solutions must therefore balance different land-use requirements. Policy responses need to be well-coordinated across different sectors, in order to conduct trade-off analyses.



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Soils

All farmers can boost crop yields and remove carbon from the atmosphere through better soil management. Carbon sequestration by agricultural soils could deliver annual emissions reductions equivalent to removing 20-40% of cars from the roads.

Soils can be enriched through smarter agricultural practices such as more efficient use of fertilisers delivering a triple win: greater carbon retention, higher crop yields and lower costs.

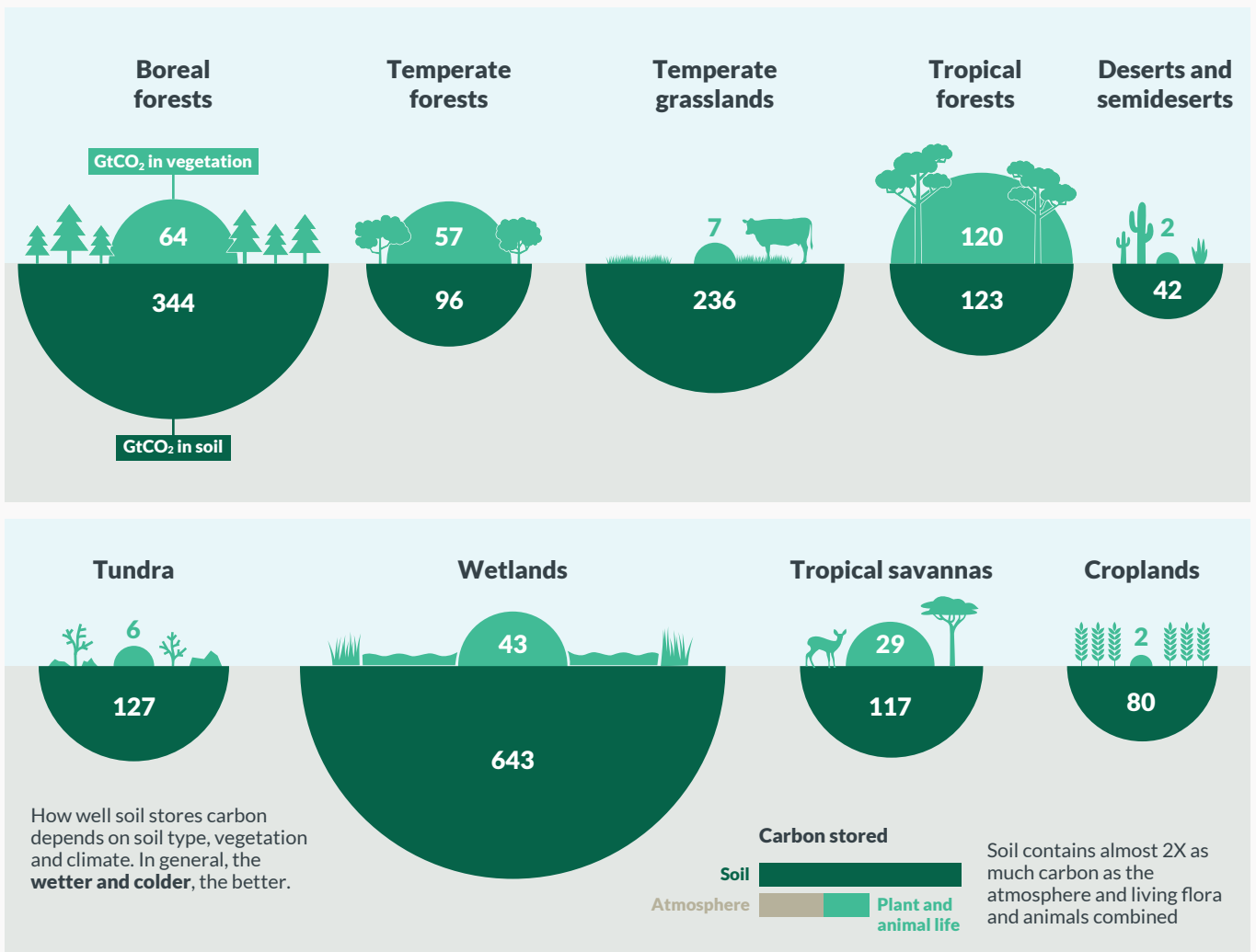
Cover crops also have the potential to improve soil fertility, increase yields and retain soil moisture to reduce the impacts of drought.

Through the adoption of smart carbon farming practices, an acre of land could store anywhere from 10 to 100 tonnes or more of carbon, which can help both mitigate climate change and improve crop yields. Experts say small increases in soil carbon should be attainable in cropped soils almost everywhere.

Investing in our soils is a strategy with massive untapped potential—potential we can realise if we start thinking holistically about the kind of interventions and policies needed from the top down and ground up. If we're to deliver on increasing demand for food, sustaining global health, maintaining biodiversity and tackling climate change, then soil is our most underappreciated ally.

Visualizing carbon storage in the Earth's ecosystems

The world's forests absorb around **15.6 gigatonnes of CO₂** each year. That's around 3X the annual CO₂ emissions of the United States. However, around **8.1 gigatonnes of CO₂** leaks back into the atmosphere due to deforestation, fires and other disturbances.



Source: <https://www.visualcapitalist.com/sp/visualizing-carbon-storage-in-earths-ecosystems/>



Food systems have never been completely included in the conversation and promotion of NbS because of the challenge of associating agricultural landscapes with natural ecosystems. In the cases of climate-smart and regenerative agriculture, this is starting to change. Regardless, to truly deliver their potential, efforts to protect or restore natural ecosystems must sit within holistic and integrated landscape management plans that consider other important

land uses, such as commercial activities and sustainable food production. Therefore, sustainable land management practices and NbS are intrinsically linked.

To address climate change, we need to change the way in which we manage the land and the resources it provides. Now is the time to help companies and governments turn the agricultural sector from one of the world's largest emitters into a

climate champion. The threat to our food security and the costs incurred through not changing the way we manage our land and produce food, far outweighs the cost of implanting sustainable practices and a reimagined food system.

Myth # 5 - NbS disenfranchise IPLCs

“By implementing nature conservation and restoration projects in areas under the stewardship of Indigenous People and local communities (IPLCs), surely we cannot help but interfere with their lifestyles and livelihoods?”

It is one of the many great injustices of climate change that the communities who live in reciprocity with nature, rarely over-extracting, are often the same people who are the most vulnerable to climate change and the destruction of natural ecosystems. In the Amazon basin, for example, Indigenous

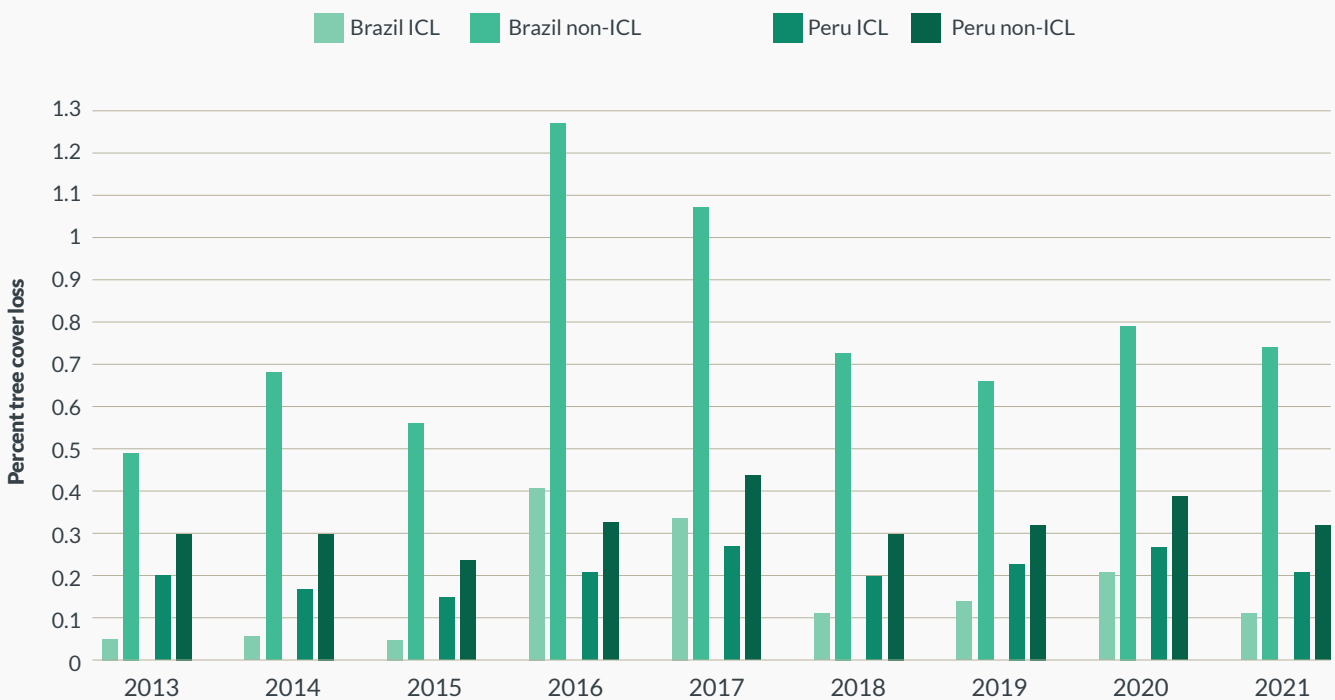
territories account for 28% of the region but only 2.6% of its deforestation.

The crises of climate change and biodiversity loss are completely intertwined. Nearly 50% of the earth’s terrestrial biodiversity is found in areas under the stewardship of Indigenous peoples⁴⁵, an area that is approximately 21% of the total land area of our planet⁴⁶, so they are – and must be – a critical stakeholder in determining solutions. Indigenous peoples must be directly and equitably included in discussions, project initiations and any potential project revenue, in a way that ensures that they are able

to maintain or even improve their well-being and livelihoods.

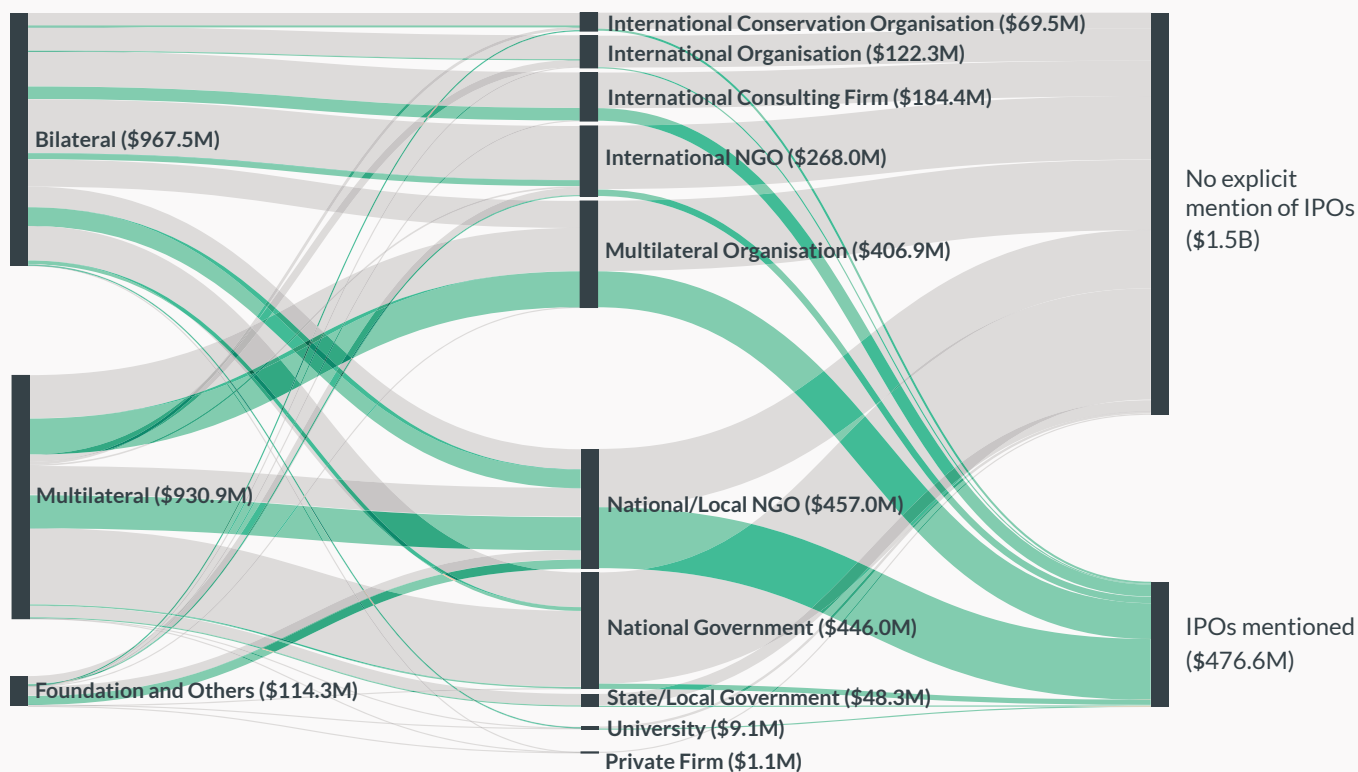
The vast majority of NbS projects are in the developing world, where regulations are often implemented in inconsistent ways, and resources are limited. Therefore, projects funded through voluntary action (e.g. carbon finance) can play a crucial role in reaching our global climate and nature goals while at the same time benefitting local communities. For example, in 2021, VCMs funnelled approximately \$1 billion to projects in Africa, South America and parts of Asia.

Percent tree cover loss inside vs. outside Indigenous and community lands in Peru and Brazil, 2013-2021



Source: <https://research.wri.org/gfr/social-governance-issues-indicators/indigenous-community-forests>

Reported funding flows to implementing organisations (2011-2022)



Source: <https://rightsandresources.org/blog/new-research-only-17-of-global-climate-and-conservation-funding-intended-for-indigenous-peoples-and-local-communities-actually-reaches-them-limiting-the-funds-effectiveness-and-inclusivity/>

Unfortunately, there have been instances in the past when projects have either violated the rights – or not respected the interests – of IPLCs. According to a recent study by Rainforest Foundation Norway, in the last 10 years, less than 1% of total climate funding addressed IPLCs' tenure and forest management⁴⁷. Therefore, it is a valid concern that NbS disenfranchise IPLCs.

But this need not be the case. Moving forward, changes must be made across NbS including:

- The conversation around VCMs and other incentive-based finance should not be constrained to the voices of historical polluters or actors. We need genuine engagement and

inclusion of diverse perspectives in decision-making. All key market stakeholders, especially Indigenous peoples and other frontline community members, must have the opportunity to participate fully in the governance of the markets. That means key stakeholders are meaningfully represented in governing bodies, have power to contribute to the design and oversight of both the market and individual projects, and have effective channels for their grievances to be addressed.

- Of total carbon stored in the world's forests, 17% is managed by IPLCs⁴⁸. As global forest cover declines, securing IPLC rights to land and recognising them

as forest stewards are essential to mitigating climate change and protecting biodiversity, not to mention the right thing to do. Recent reports tell us that recognising Indigenous land rights leads to lower deforestation rates, higher biodiversity conservation and higher carbon storage⁴⁹. Forest conservation programmes must also create equitable benefit-sharing mechanisms. With only 17% of climate and conservation funding committed to IPLCs actually reaching them, we need to find new funding mechanisms that deliver finance directly to the communities.

Case study: Pará, Brazil

For many emerging economies, agriculture, forestry and the extractive industries remain the major drivers of economic progress, environmental degradation and carbon emissions. But it is possible to separate development and inevitable degradation. For example, in the Brazilian state of Pará, sustainably intensifying cattle ranching and expanding cocoa farms can increase production and rural incomes without clearing forests. Cocoa is native to the Amazon, can be grown in mixed systems with natural forests, and is highly profitable. It's a solution for local business and biodiversity, as well as global food security and climate mitigation.

Case study: Carbon Tanzania

In Tanzania, many forested areas are home to some of the country's most marginalised people. For

example, the Hadza, Datooga and Masai communities have been living sustainably on their land for thousands of years, but their environment is subject to exploitation by migrant farmers and practices that are not allowed under their land-use plans. By establishing and strengthening land rights and resource tenure over these naturally forested areas, Indigenous forest communities are able to sustainably manage their forests and resources, while securing improved livelihoods, often through carbon credit revenue.

Case Study: Vida Manglar

Global awareness of the significant carbon storage potential of mangrove forests is increasing the number of projects being developed in coastal ecosystems. In Colombia, the Vida Manglar project is the first mangrove forest to fully account for the carbon stored both above water, and below it. Vida Manglar's

long-term success relies on support from local communities, which are part of the project's governance structure and actively participate in monitoring, data collection and species conservation. In exchange for making specific commitments that limit the amount of wood they extract from the mangrove forest, community members receive benefits, such as wages for patrolling forests to prevent illegal logging.

Carbon finance elegantly recognises that money does not grow on trees and corrects a critical market failure by enabling IPLCs to earn their living as providers of ecosystem services, not as recipients of charity. Therefore, when NbS are developed in close collaboration with IPLCs and using the latest science, the chances of project success improve enormously. For more NbS case studies, please see nature4climate.org/nature-in-action/case-studies/



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Myth # 6 - Technological solutions are better and more permanent than NbS

“The rapid evolution of technology has improved the quality of our lives and has been attributed to saving thousands of lives during the COVID-19 pandemic. Won’t it be able to save us from climate change too?”

Many have pinned hopes of tackling climate change on breakthroughs in technology. We frequently hear that quantum leaps forward from radical technological developments could change the game completely, and catapult us into a brave new

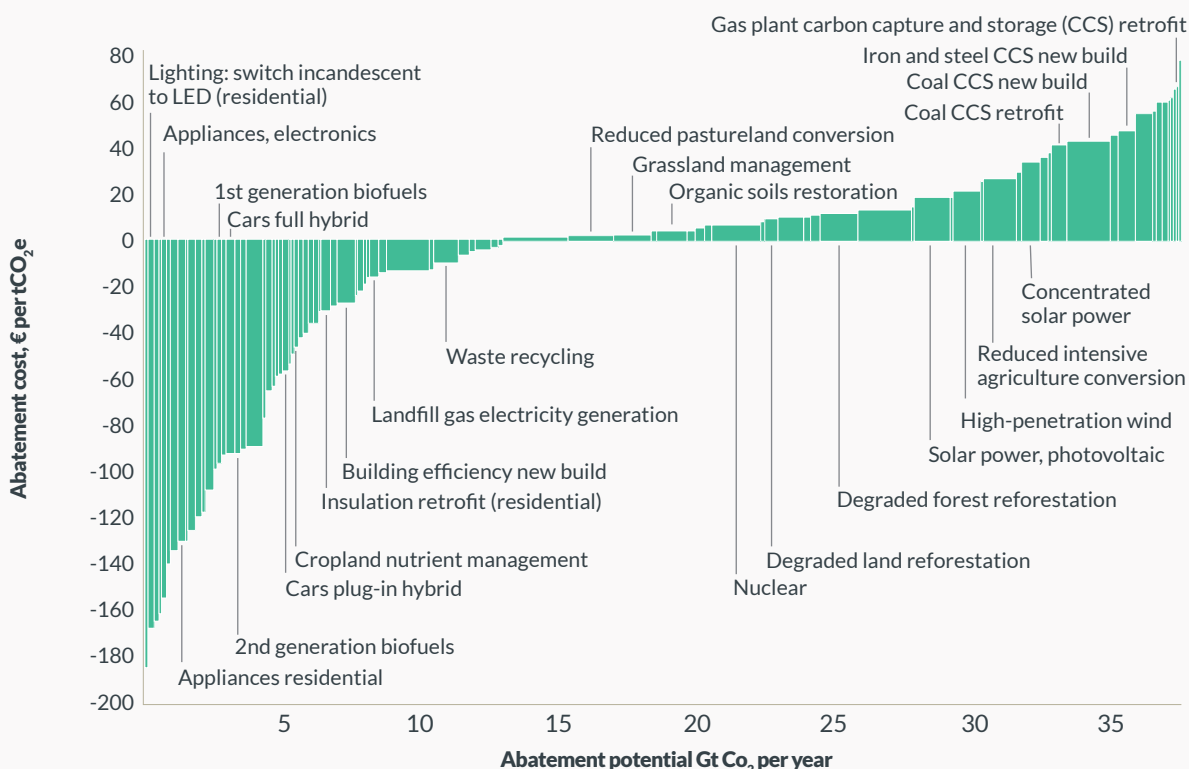
world of low-carbon energy and geo-engineering.

There is absolutely no doubt that technology is vital. Over decades, significant advances have been made in low-carbon energy production and storage, transportation, and energy efficiency – stimulated by policy change and the market response. Investments in clean energy are expected to have topped \$1.7 trillion in 2023⁵⁰, but our carbon emissions continue to increase, and demand for energy is projected to grow in the decades ahead, as economic growth spreads and global population increases. Technological solutions

such as direct air carbon capture, or solar aeroplanes will help us in the future, but they need to be invented, reduced in cost, and scaled to be effective, and that will take time.

According to McKinsey analysis, carbon capture and utilisation storage (CCUS) uptake needs to grow 120 times by 2050 for countries to achieve their net-zero commitments, reaching at least 4.2 gigatonnes per annum (GTPA) of CO₂ captured. The high cost of developing CCUS projects is a major barrier to developing and scaling up the technology. It is estimated that scaling the CCUS industry will require \$130 billion per year from now until 2050⁵¹.

Global GHG abatement cost curve



Note: The curve presents an estimate of the maximum potential of all technical GHG abatement measures below €80 per tCO₂e if each lever was pursued aggressively. It is not a forecast of what role different abatement measures and technologies will play.

Source: McKinsey Global GHG Abatement Cost Curve v2.1

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Nature is the oldest technological solution to bring back balance to global carbon cycles. Amidst all the legitimate concern about fossil fuel emissions, the role of nature in tackling climate change is sometimes overlooked. Even with current rates of adoption of clean energy and other climate technologies, we will not be able to reduce GHG emissions quickly enough to meet our climate goals. By mid-century, we'll need to either completely stop emitting CO₂, or drawdown equal amounts to what we put into the atmosphere. But in many sectors – like transport and energy intensive industries – it is still challenging with existing technologies to stop emitting CO₂ completely. Natural climate solutions provide an invaluable stepping stone to a decarbonised future by cost-effectively cutting or removing a third of annual GHG emissions by 2030 and, unlike other technologies, are available right now.

Some argue that technology is better equipped to permanently store carbon, while for NCS projects there are some challenges in trying to guarantee permanence. For instance, a forest that is restored through carbon finance may still be subject to factors (e.g. fires, pests, logging) that could result in the stored carbon being released (back) into the atmosphere; this is classed as a 'reversal'.

To ensure the permanence and the environmental integrity of nature-based carbon credit projects, many standards such as Verra and ART/TREES require all land-based projects to set aside a percentage of the emission reductions and removals achieved and place them into a buffer pool that is diversified across project types and geographies. The buffer pool works much like insurance does. The project owner pays a 'premium' in the form of emission reduction or removal carbon credits that are deposited into the buffer account, which, in turn, is managed by an independent standards body (the 'insurer'). If and as reversals occur in any single project in the system, the carbon losses resulting from them are covered through the cancellation of an equivalent number of buffer credits from the buffer pool.

Another effective approach to ensuring permanence is to engage equitably with the community living within or surrounding the ecosystem, and then to create a value for the ecosystem that is greater when it is intact than when it is degraded. If the local community is benefitting from the protection of their ecosystem, whether that be through the ecosystem services provided or through finance from carbon markets, then the landscape has a greater value intact than when degraded, and the community will have a greater incentive to protect it.

"Don't we need negative emissions technology?"

The IPCC 1.5-degree report is clear that we should not consider solutions that are not yet deployed or proven⁵². Large-scale removals of CO₂ from the atmosphere, using negative emission technologies (NETs), require building carbon-absorbing facilities that would require large amounts of energy for construction and operation along with significant water demands. Examples are bio-energy with carbon capture and storage (BECCS), enhanced weathering, direct air capture and solar radiation management (SRM), or fertilising the ocean with carbon-absorbing algae generated by spreading iron over the ocean's surface, which would inevitably have consequences on the ocean food web. These technologies, which are very expensive, are not yet available at scale, and their impacts on humans and the environment are not yet fully understood.

NETs in the future will certainly have a role to play but, based on current information, not at the levels required to compensate for inadequate mitigation measures. Natural climate solutions are available immediately, are cost-effective, scalable and can transform key sectors of the global economy, such as forestry and agriculture.

The choice is quite clear – either we hope that we'll be saved by technologies that don't yet exist at scale, or we can realise that nature already provides us with many of the tools we need to achieve 'net zero'. Also, if approached in the right way, can help us on our journey towards halting and reversing biodiversity loss.

Myth # 7 - Corporate claims using NbS are just greenwashing

“Don’t companies today just use claims to reach nature positive as marketing spin?”

At the UN Biodiversity Conference (COP15) in December 2022, the world committed to a new set of goals to protect and restore nature for current and future generations. The agreements set out a framework to a nature-positive world by 2030 and full recovery of nature by 2050.

Business activities have a direct and indirect impact on nature loss that create risks for us all. Therefore business also has an important role to play by adopting strategies that contribute to halting and reversing nature loss.

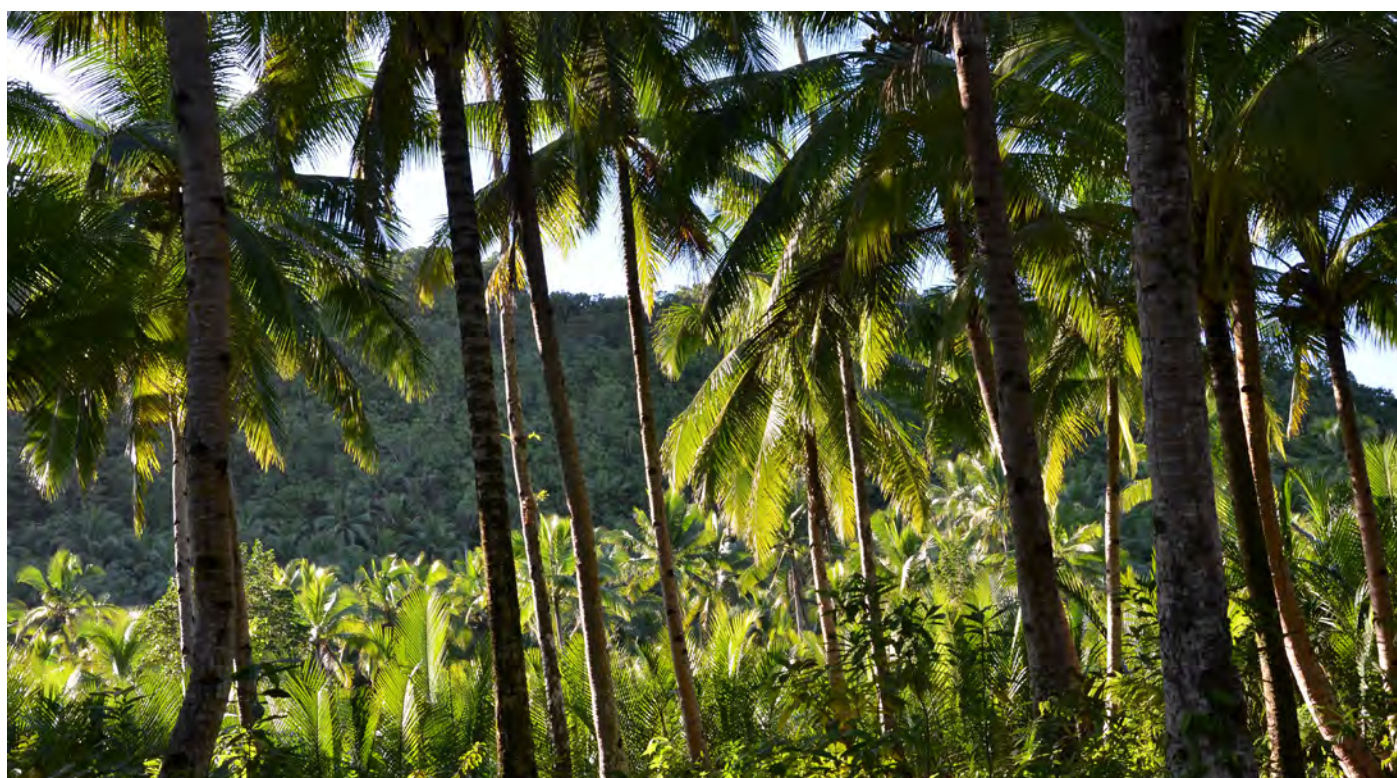
Nature commitments

Nature positive is a global goal to immediately halt and reverse nature loss by 2030. It includes a view to full recovery of nature by 2050, where thriving ecosystems and nature-based solutions continue to support people and future generations, and play a critical role in tackling the climate crisis.

As more businesses and financial institutions become aware of their role in addressing nature loss, nature-positive commitments are growing. Nature-positive claims are made when companies look at how to minimise the environmental impact of their operations and look beyond their value chain for ways

to enhance ecosystems⁵³. Unlike carbon neutral claims, a product or service cannot be considered nature positive. These commitments to protect and restore nature have the potential to position companies as leaders on the journey toward a nature-positive world.

Every business relies on nature in some form, whether that be for a product or an ecosystem service that natural ecosystems provide. While businesses have been aware of their climate impacts for some time, they are only now becoming increasingly more aware of their impact on our natural resources – which are diminishing rapidly. However, few companies have made quantifiable commitments to nature outside of carbon⁵⁴.



Greenwashing

Greenwashing is when an organisation makes unsubstantiated claims about how environmentally friendly their product, service or organisation is while continuing with business as usual. Throughout 2022, a number of global brands were accused of greenwashing as awareness of this deceptive marketing practices grew amongst consumers. To avoid greenwashing, corporate claims need to be transparent and follow guidance from initiatives such as the **WBCSD: Roadmap to nature positive**.

Without transformative changes in our economy and the way we do business, nature-negative trends such as global declines in species populations, as well as losses in efficiency and efficacy of ecosystem service provision, are expected to continue through to 2050 and beyond⁵⁵. There are a number of initiatives that provide guidance in this space, including the **Science-**

based Targets Network (SBTN), the **Capital's Coalition**, the **Taskforce for Nature-related Financial Disclosure (TNFD)**, **World Business Council for Sustainable Development (WBCSD)** and **Business for Nature**.

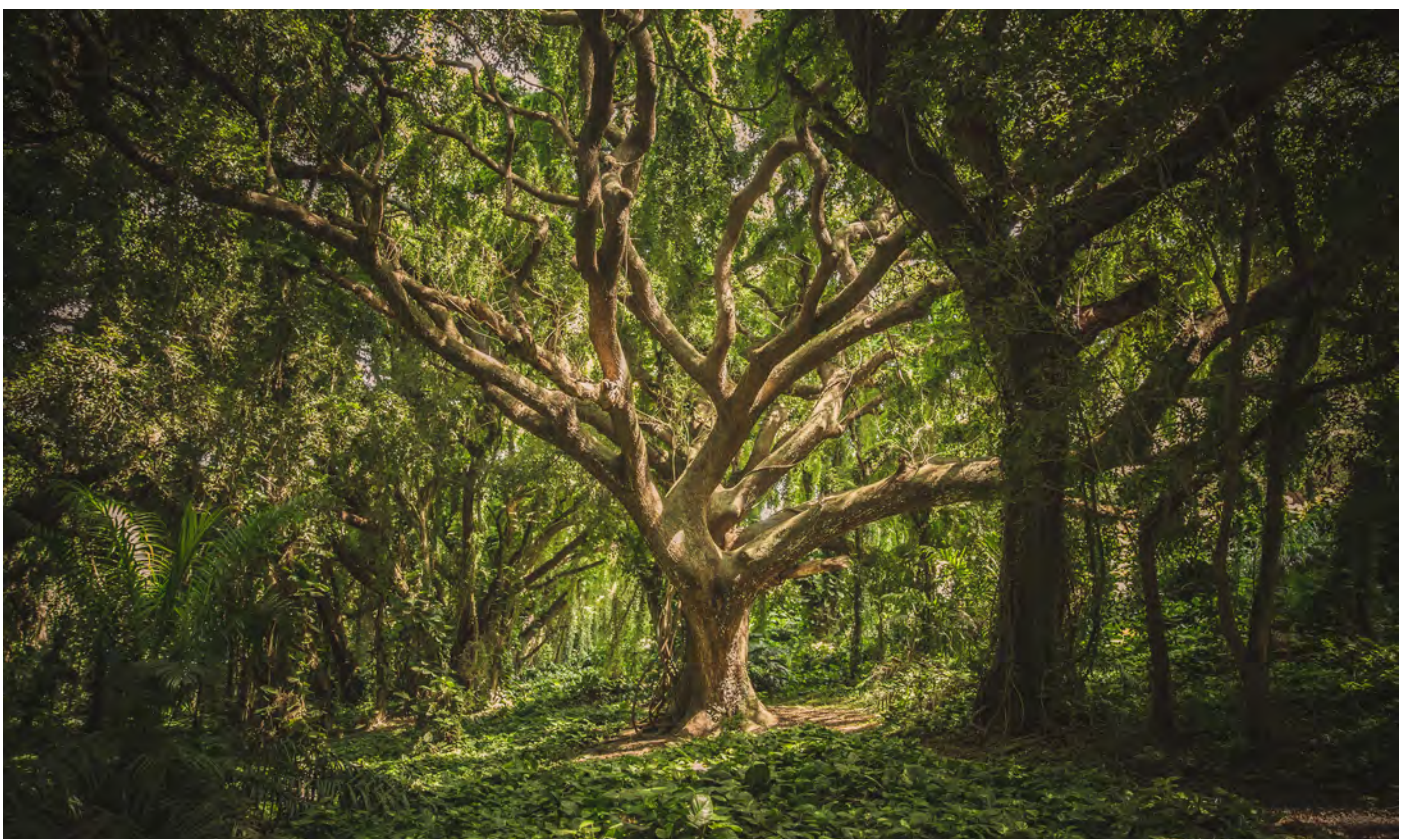
The private sector also has a critical role to play in reversing deforestation. This can take three forms:

1. Eliminating deforestation in supply chains: pressure is growing on companies from investors, consumers and employees to clean up their supply chains. This is vital given that over half of global GDP is dependent on services nature provides⁵⁶.
2. Carbon payments for forest-protection activities: e.g. payments into mandatory emissions-trading systems and carbon credits traded through VCMs. Jurisdictional-level carbon credits offer companies a major new opportunity to contribute.

3. Private investment into nature-positive development: Companies and financial institutions are increasingly investing in nature-positive initiatives (including forest conservation) that deliver benefits for biodiversity, climate and people.

The World Economic Forum (WEF) estimates that nature-positive policies could attract more than \$10 trillion in new annual business value⁵⁷. If investment in NBS were to triple by 2030, the UNEP estimates that an additional 20 million jobs could be generated worldwide⁵⁸.

It is clear that business has a critical role to play in addressing two of our most pressing issues: climate change and biodiversity loss. By investing in NbS, businesses can contribute significantly to a nature-positive world by 2030.



Part 2 – Nature-based carbon credits

The science is clear: we cannot achieve the Paris Agreement's global climate goals without harnessing the power of nature-based solutions (NbS) for both climate mitigation and adaptation. We need NbS to provide a third or more of the mitigation required by 2030 if we are to keep our global climate goals in reach.

The voluntary carbon market is one of our strongest available options for delivering climate finance to natural climate solutions (NCS) projects and benefitting local communities. Climate Focus estimates that carbon markets could deliver up to 32% of the global cumulative potential of NbS by 2030, and 10 - 12% of the overall mitigation needed by then. However, in the last three years, only 1.2% of the annual cost effective potential of NbS has been unlocked by the VCM⁵⁹.

What are natural climate solutions

Natural climate solutions are a subset of nature-based solutions. They are the conservation and restoration of all land and coastal ecosystems and improved management of land in order to increase carbon storage or avoid GHG emissions. A natural climate solution is a nature-based solution that addresses the climate crisis and can provide up to a third of the emission reductions needed to meet our climate goals.

As the demand for carbon credits has increased so too has the level of scrutiny focused on project developers and the commitments of corporate buyers. The VCM must be built on the basis of social and environmental integrity, with strong governance, safeguards, transparency and inclusive participation needed to deliver the

climate and biodiversity benefits promised. When done right, NCS carbon credits deliver a range of social and environmental benefits in addition to climate action, while also providing adaptation and resilience to climate impacts.

This paper focuses on 11 myths prevalent in the VCM in an attempt to support market participants with making informed decisions that will lead to the necessary scaling of NCS.

11 myths about nature-based carbon credits

Myth # 1 - All carbon credits can and should be used as 'offsets'

“Through buying carbon credits can I assume that these credits have removed the scope 1, 2 and 3 emissions of my business operations?”

When incorporating carbon credits as part of a carbon reduction strategy or net-zero commitment, it is imperative that all efforts are focused first on cutting emissions. According to the SBTi, most companies need to cut at least 90-95% of their internal emissions by 2050 to achieve net zero. This

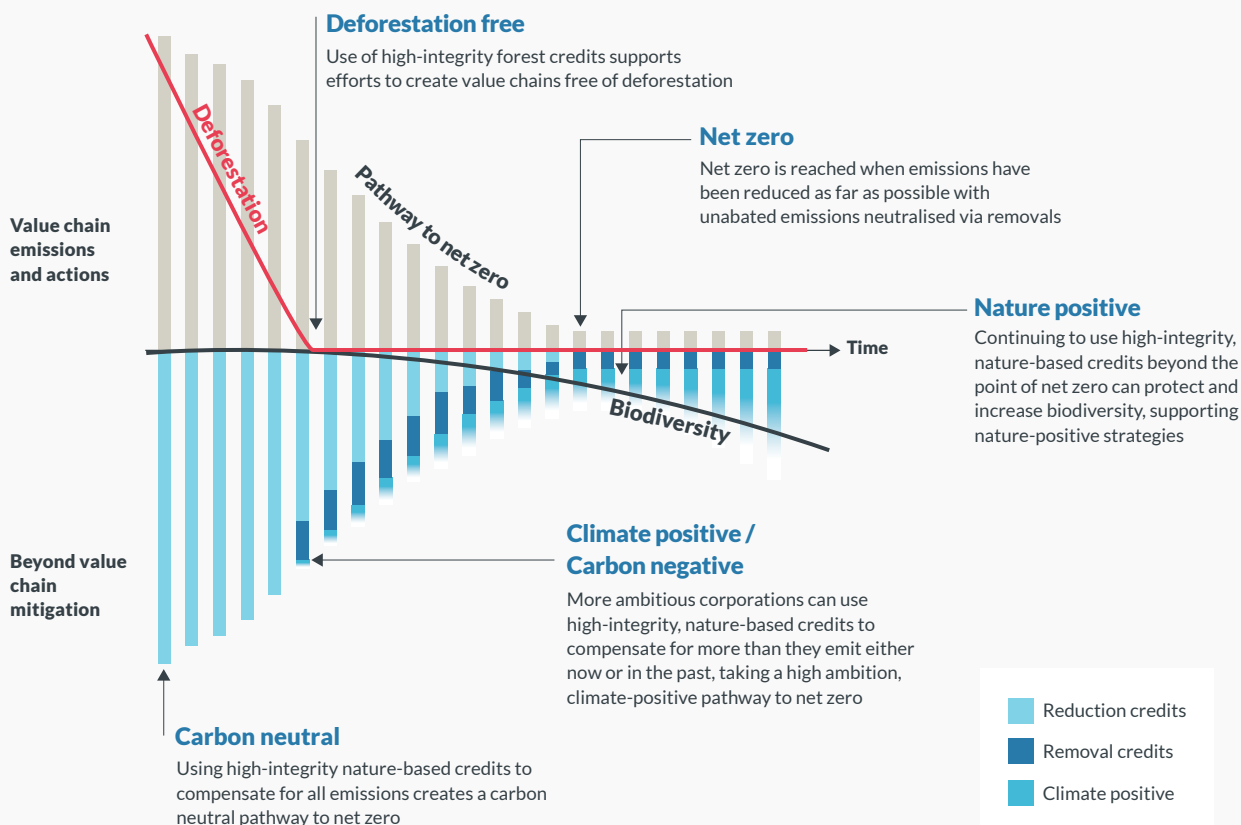
means they must prioritise cutting emissions from their internal operations, investment portfolios, and supply chains – including those from agriculture, forestry and other land uses (AFOLU).

Only after a company or institution has reduced its emissions as far as is possible can carbon credits be purchased. The voluntary purchase of these credits enables organisations to compensate for those emissions that have not yet been eliminated from a company's operations or supply chain. The

purchase needs to be considered a contribution to funding climate action through projects that avoid or remove emissions above and beyond what needs to be done, rather than counting towards a company's emission reduction target.

If the company were to prioritise the use of carbon credits to 'offset' direct emissions instead of as part of their decarbonisation pathway to net zero, we risk the private sector believing we've achieved net zero when in reality we are still far from reaching our target.

A high-ambition pathway to net zero and nature positive



Source: https://emergentclimate.com/wp-content/uploads/2022/10/Emergent-white-paper-corporate-claims_.pdf

In addition to measuring a company's scope 1 and 2 emissions, we also need to concentrate on scope 3 emissions, particularly the global supply chain, which can be an average of 11.4 times higher than operational emissions⁶⁰. The emerging standards around forest, land use and agriculture (FLAG) emissions enable companies in land-intensive sectors to quantify and set science-based targets that fully incorporate deforestation and land-related emissions.

Carbon credits are an important means of channelling funds to mitigation projects and programmes. But this must not undermine countries' or companies' own responsibility for urgent emission reductions now, and is not an excuse for failed ambition. All individuals, companies and countries must follow a high-ambition, science-based pathway to net zero and nature positive.

While it is essential for companies to identify and address their material impacts on nature, cleaning up supply chains alone won't solve the twin crises of nature loss and climate change. Simply put, a significant number of land-based emissions occur beyond the reach of corporate supply

Double counting

Double counting occurs if a single emission reduction or removal is used by more than one party

to demonstrate compliance with mitigation targets. Double counting has become an important topic, particularly in the context of the Paris Agreement, because all countries have targets, and any traded emission reduction or removal units should only be claimed by one country. To address this concern, the Paris Agreement includes the concept of "corresponding adjustments", a double-entry accounting approach designed to ensure that emission reductions or removals are only counted once.

The Paris Agreement does not have the mandate to regulate the VCM. However, Article 6 rules might indirectly impact its development. The concept of corresponding adjustments has sparked a debate within the VCM about whether voluntary credits could be counted toward the host country's Nationally Determined Contribution (NDC), while also claimed as an offset by companies' net-zero targets⁶¹. Although there's not a definitive answer to how Article 6 will impact projects on the ground, some elements should be taken into consideration by VCM players to better align with the Article 6 mechanism when it is fully operational.

The Voluntary Carbon Market Integrity (VCMI) initiative corporate claims code recommends that all companies using carbon credits

act transparently and determine if a corresponding adjustment has been made by a country or if it is being used by the country to meet their own NDCs. In the absence of a host country's corresponding adjustment, companies must publicly communicate that the mitigation underlying the carbon credit may also count toward the host country's NDC⁶². However, VCMI guidelines have not yet stated that a corresponding adjustment is needed for the VCM.

Ultimately, net zero can only be claimed once emissions have been cut as much as possible and balanced by a corresponding amount of carbon credits. But that's the destination, and currently we are in transition. Investing in nature-based reduction credits that come with high co-benefits for people and biodiversity, is one way for companies to take a 'high ambition pathway' during this transition. If every company invested in high-quality nature-based solutions to address just 10% of their unabated emissions, we would mobilise billions in additional climate finance helping to infuse much needed capital into nature conservation efforts⁹⁷.

Myth # 2 - Carbon credits are used as a delaying tactic

“If we invest in nature-based carbon credits, can we continue to use fossil fuels for longer?”

When used appropriately, carbon credits can greatly accelerate corporate and global net-zero goals. Corporates should first pursue aggressive decarbonisation of their value chains to the greatest extent possible, then use high-quality carbon credits to compensate for the carbon pollution that remains, then additional carbon credit purchases to further accelerate climate progress. This approach allows corporate leaders to transform the industrial and land-use sectors that their value chains rely upon, and to unlock the power of nature to address the rest of their climate impact.

Nature-based carbon credits hold immense potential for helping us maintain a liveable climate where nature is still part of our everyday lives. Protecting natural ecosystems, restoring degraded ones and adopting better practices for sustainable land management addresses multiple challenges and results in positive social, environmental and economic impacts. NBS can also help local communities to adapt to climate change and to enhance their resilience to climate impacts.

However, nature-based carbon credits are not a substitute for rapid decarbonisation or taking action to protect and restore nature, all efforts need to be maximised (see myth 1 above). It should not be either/or; it must be both/and, with a considered

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balance between the two. While NbS are not a silver bullet for climate and nature action, they do hold enormous potential for responding to climate change and nature loss, while also bringing hugely positive co-benefits for people and biodiversity.

In the short term, nature-based carbon credit use is an effective strategy to fund the protection and restoration of nature to enhance carbon sequestration, while deep decarbonisation is happening in the rest of the economy. Carbon finance does three things very well:

1. It forces a company to calculate its carbon footprint and emissions, giving them an idea of how to manage and reduce those emissions. One study found that companies that incorporated carbon credits into their decarbonisation strategy spent 10 times more on emission reduction activities than the typical company that didn't purchase carbon credits⁶³. A more recent report by Sylvera discovered that on average, companies that buy carbon credits

are simultaneously cutting their scope 1 and 2 emissions twice as much as companies who don't buy carbon credits⁶⁴. These findings are supported by Trove Research whose own study of over 4000 companies over a five-year period determined that companies that use carbon credits decarbonise twice as fast as those that do not use carbon credits⁶⁵.

2. When a company buys credits to compensate for its emissions, it creates a cost it has to manage, effectively creating an internal price on carbon. So now the damage has a price, which it didn't before.
3. When a company invests in nature-based carbon credits as part of a credible emission reduction strategy, they are investing in local projects, local ecosystems and local economies. This investment often provides local organisations and communities with a critical stream of revenue – giving local communities the agency to improve their own resilience to climate change.

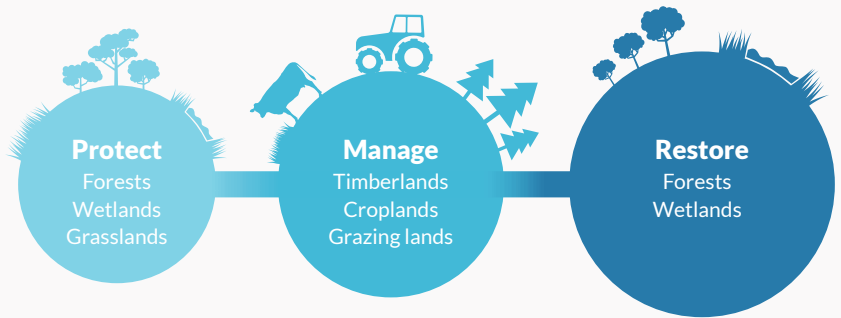
Myth # 3 - NbS carbon projects are all about planting trees

“I support a number of tree growing projects. Are there any other types of projects I can engage with?”

Tree growing projects attract a considerable amount of media attention but afforestation and restoration projects are just one type of project generating credits out of 170 carbon credit types monitored by **Ecosystem Marketplace (EM)**.

Tree growing is an important way to implement large-scale ecosystem restoration, with **guides** being published to establish best practices. However, it is crucial to remember that

Protect, manage and then restore lands for climate mitigation

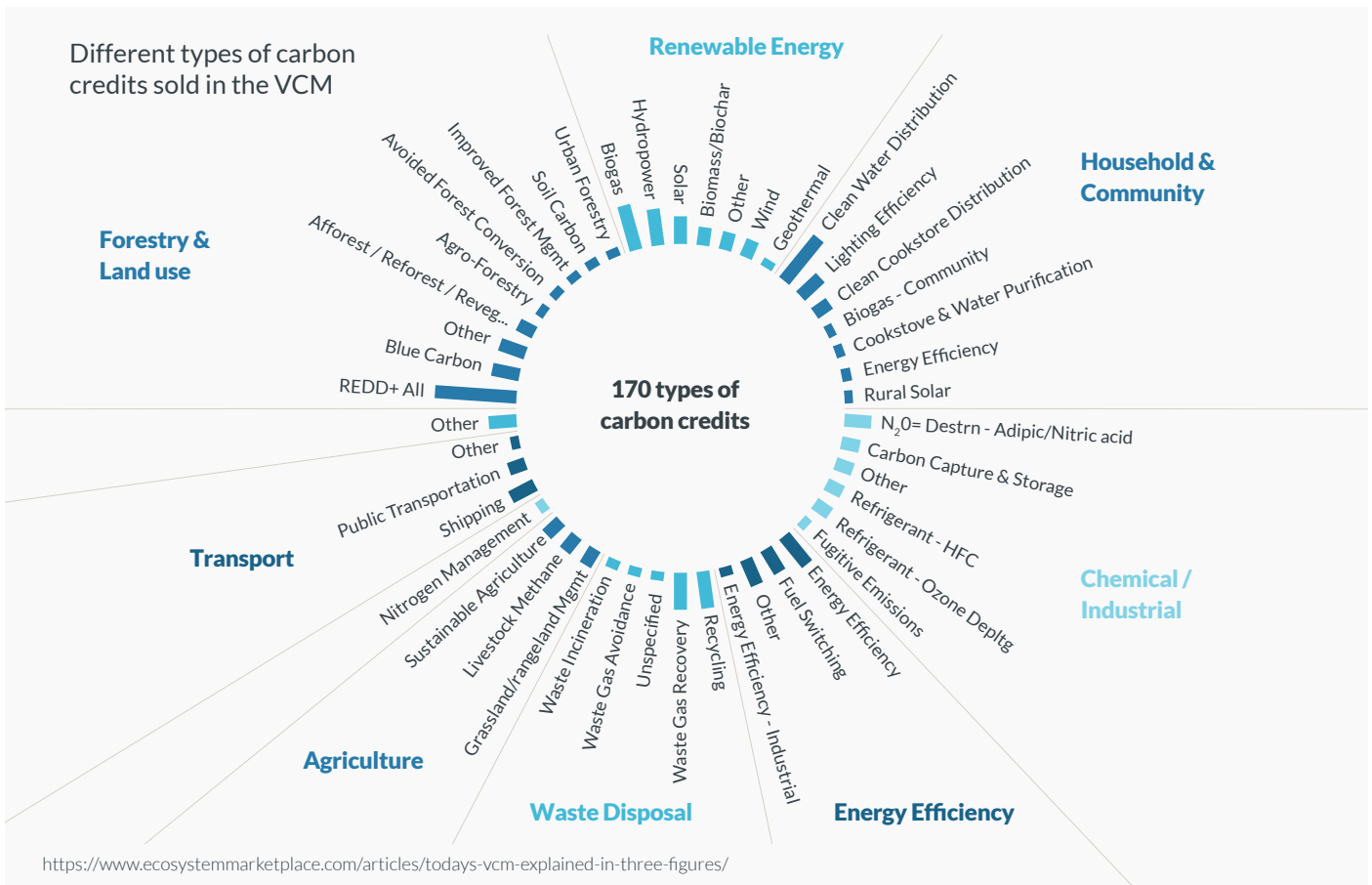


Source: <https://www.nature.com/articles/s41558-021-01198-0>

we must also protect existing forests and other ecosystems that are rich in biodiversity, in addition to effectively managing working landscapes.

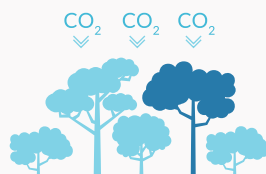
A 2021 paper⁶⁶ details the importance of following the hierarchy

of protect, then manage and finally restore ecosystems. Intact ecosystems are irreplaceable over the short- to medium-term, providing not only climate and biodiversity benefits, but also homes and livelihoods for local communities.



<https://www.ecosystemmarketplace.com/articles/todays-vcm-explained-in-three-figures/>

Services provided by nature



Carbon removal

We need natural climate solutions to provide up to a third of the cost-effective climate mitigation required to achieve the climate goals stated in the UN Climate Paris Agreement.



Biodiversity

Conserving, better managing, and restoring natural lands will protect native habitats for plants, animals and other organisms.



Food security

Agricultural improvements can boost productivity, helping to meet the growing demand for food without expanding the footprint of farming.



Air and water

Terrestrial and coastal ecosystems play an important role in improving air and water quality and protecting water security.



Economic benefits

Well-crafted development policies and programmes can create growth and prosperity while also curbing emissions.

Source: <https://nature4climate.org/science/n4c-pathways/>

Protect, manage, restore

NCS that protect forests, wetlands and grasslands have the potential to mitigate 3.9 Gt CO₂e globally with forests offering the most mitigation potential. Protection NCS offer a high per hectare mitigation that

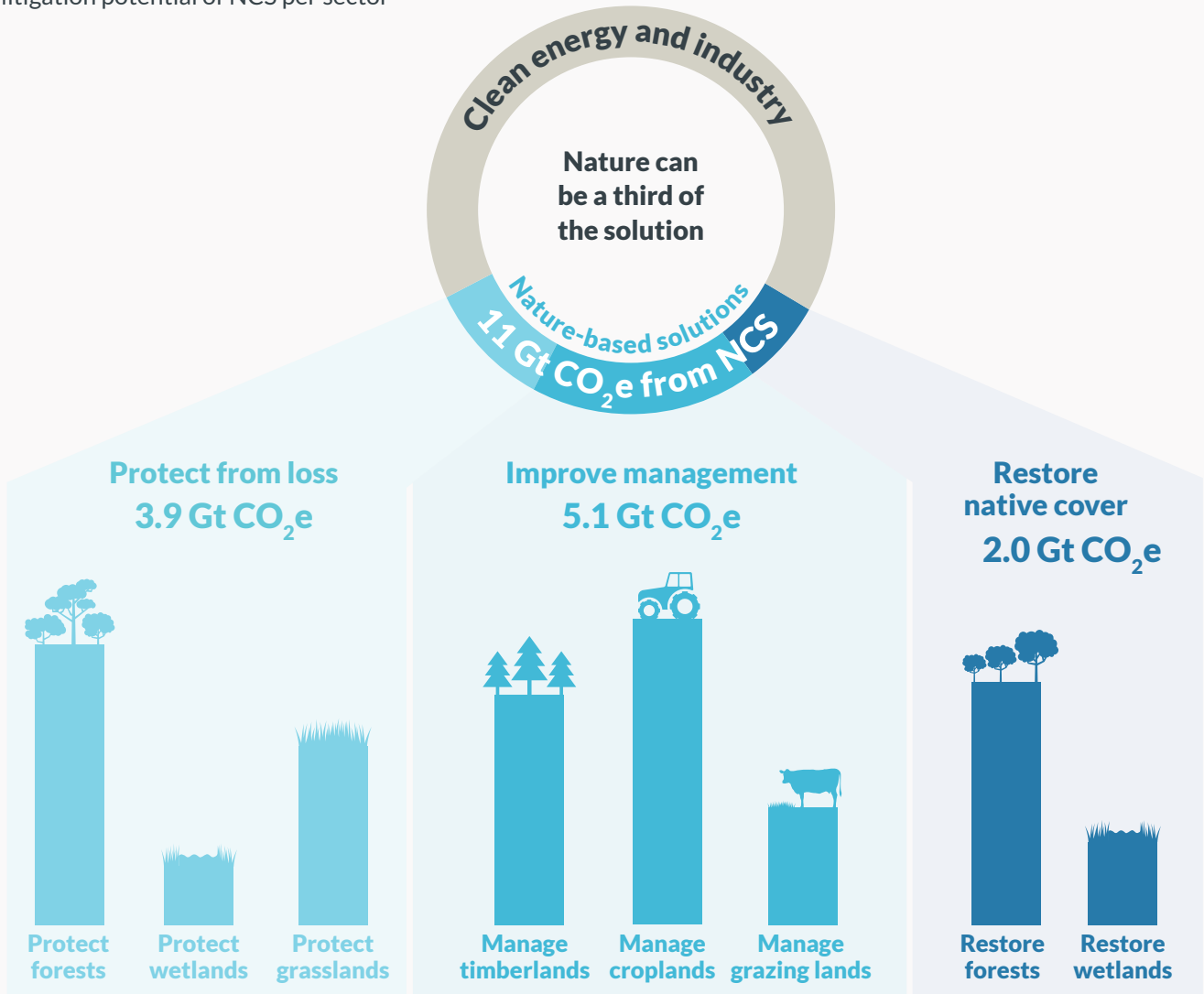
can be realised quickly and at a low cost per tonne of CO₂e compared to technological solutions, and provide many co-benefits.

Improving management practices on working lands has the potential to both avoid GHG emissions and sequester carbon while maintaining commodity production.

The improved management of working lands can contribute to mitigating 5.1Gt CO₂e globally⁶⁷.

Restoring landscapes provides 2Gt CO₂e globally. Restoring forests, wetlands and grasslands can be slow and expensive, but does provide vital benefits to biodiversity and people.

Mitigation potential of NCS per sector



Source: https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_Natural_Climate_Solutions_Handbook.pdf

As the urgency of the climate crisis escalates, and our understanding of how nature can support us to mitigate and adapt to climate impacts grows, we are discovering and unlocking the potential of more ecosystems. The world’s marine and coastal systems, known as blue carbon ecosystems, in addition to our soils, have immense carbon sequestration potential. NCS projects are evolving to harness the power of these ecosystems by protecting, managing and restoring soils, mangroves, seagrass beds and tidal marshes.

Blue carbon ecosystems are some of the most productive on Earth and cover 49 million hectares⁶⁸. Demand for blue carbon projects is growing as governments, businesses and NGOs are beginning to realise the potential of these ecosystems to not only mitigate climate change but help protect us from climate impacts such as storm surges.

Regenerating our soil enhances its ability to sequester carbon while supporting farmers. The IPCC highlights soil carbon sequestration as a promising NBS that has high potential for removing carbon from the atmosphere at low cost. With

increased interest and scrutiny in soil carbon NbS globally⁶⁹, Verra has recently updated their methodology for improved agricultural land management to reflect scientific advances.

While the focus has long been on forest ecosystems, it is important to remember that our coastal and freshwater ecosystems provide enormous mitigation potential that has historically been overlooked. Carbon credits provide an opportunity to shine a spotlight on these important ecosystems and channel much needed finance to this growing segment of the market.

Myth # 4 - All forest protection projects have 'dodgy' baselines

“Recent media coverage reported that 90% of forest protection credits are worthless due to overinflated baselines. How can I trust any forest carbon credit?”

Baselines are a hotly debated and often misunderstood part of carbon markets. A baseline scenario simply represents what would have happened if an intervention didn't take place. It is the bar that the carbon project is measured against and has a large impact on how many carbon credits are generated. For a forest protection (REDD+) carbon project, this represents how much deforestation would have occurred in the project area in the next five or so years if the carbon project had not occurred. While we cannot directly observe a baseline scenario, science is becoming increasingly better at estimating the baseline.

It's worth noting that any claim that any company, government, or individual makes about the world implicitly has a baseline scenario, but often the baseline scenario is never calculated or is based on high-level assumptions. For example, when a sustainability consultant claims that their clients experience a 30% decline in emissions over five years, this claim is in reference to a baseline, but that baseline often receives little scrutiny. For carbon markets, vast scientific effort has been put into estimating that baseline scenario. For example, if forest protection activities had not been implemented in 2020, how much deforestation would have happened in 2023?

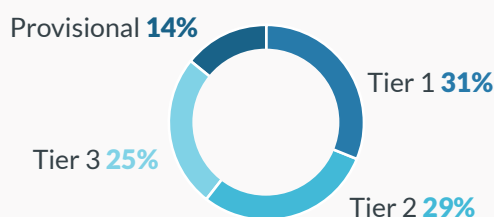
Media criticism of forest protection projects in January 2023 was based on three scientific articles that proposed new ways of estimating the baseline for forest protection projects. Results of one of the papers was misinterpreted. The two other scientific articles proposed new baseline approaches which are a valuable contribution to science, but more work is needed to make these new approaches ready for broad use and to confirm their results. In addition, the baseline approach criticised in the media was already in the process of being phased out by Verra, the world's largest carbon standard. Organisations like The Nature Conservancy, and others, are embarking on new science initiatives to **test multiple REDD baseline approaches** in an effort to determine which works best. Importantly, the science on which carbon markets, corporate carbon accounting, renewable energy, and other climate action is based upon will continue to change in the future. This is a good thing. What is most important is that all stakeholders use the best available science today and invest in continual improvement.

The carbon credit ratings agency Sylvera conducted their own thorough

analysis of forest carbon credit projects and determined that 30% of forest protection carbon credits are of high-quality with sound baselines⁷⁰. Sylvera's tiered rating system found only 25% of forest carbon projects credits to be 'worthless'. While 25% is still too high, this analysis is based on the older REDD+ baseline approaches that Verra is already phasing out in 2023. Standards are constantly working on improving their methodologies to ensure they are using the best available science to establish baselines and determine how many credits can be issued by a project and effectively weeding out any projects that are unable to produce high-quality credits.

A new report from Everland investigating 53 REDD+ projects across seven countries found that overall predicted baseline forest loss corresponded closely with actual forest loss found in the jurisdictions surrounding the REDD+ projects. While the report is pre-published, the findings demonstrate that REDD+ projects have established sound baselines with the difference between predicted forest loss and actual forest loss only at 0.03%⁷¹.

Sylvera REDD+ ratings summary (% projects)



Source: <https://www.sylvera.com/blog/guardian-offsets-response>

Certification

High-quality carbon credits use sophisticated methodologies and verification processes built up by non-profits, to ensure that a tonne paid for means a tonne avoided or removed. All certified projects must address additionality, permanence and leakage. (For more detail on additionality see Myth 5 below.)

There's a wealth of knowledge and commitment inside the organisations behind these systems, from the scientists and policy experts at methodology developers Verra, ACR and the Gold Standard, to the entrepreneurs behind the start-ups using technology to track and rate carbon credit quality.

All emission reductions certified by credible GHG crediting programmes are audited by the independent third-party auditors, and all the documentation behind every single accredited project (including auditors' reports), is available for review by anybody on a publicly-accessible registry⁷².

Credible GHG crediting programmes themselves must also go through a rigorous process that requires the approval of accounting methodologies, which include subjecting the methodology to scientific scrutiny and public consultation. Public consultations informed Verra's decision to not adopt the "tonne-year" accounting

method, for example, due to considerable disagreement over specific accounting procedures.

Nature-based carbon credit generation approaches are currently under close scrutiny as demand for nature-based credits grows. The market must use this increased interest to turn the criticisms around and to push for better standards, use new science, update methodologies and approaches, and implement evolving technology.

There are a number of initiatives and guidance documents on what constitutes 'high quality' available⁷³.



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Projects financed with carbon credits really do reduce emissions:

An analysis of 40 voluntary carbon projects in developing countries* concluded that:

Deforestation was
47% lower

Degradation rates were
58% lower



*compared to areas with the same topography and facing similar threats. Source: <https://conbio.onlinelibrary.wiley.com/doi/abs/10.1111/cobi.13970>

High-quality projects

There have been a handful (as in, dozens out of thousands) of carbon projects, particularly in the forestry space, where land ownership, leakage (when carbon intensive activities are moved outside of the project area) and the carbon accounting has been called into question. Often these projects are implemented in developing countries where decade-long disagreements between governments and Indigenous peoples, or between Indigenous groups, play a part in the

complexity. Research conducted by Sylvera found that of 85% forest protection projects in the market, 25% were ranked as Tier 3 (the lowest possible rating), while 31% achieved their highest Tier 1 rating⁷⁴.

Ultimately projects financed with carbon credits really do reduce emissions. The most extensive peer-reviewed analysis to date⁷⁵ looked at 40 voluntary carbon projects in developing countries and concluded that deforestation was 47% lower than in areas with the same topography and facing similar threats, while degradation rates were 58% lower.

The VCM should mobilise finance into initiatives that truly reduce or remove GHG emissions in the atmosphere. When investing in NbS to help achieve climate goals, countries and companies must ensure their investments are of the highest quality and fully consider ecological and social impacts and benefits. However, only if investors, NGOs, regulators, and the public trust that the VCM can deliver in the public interest will it attract and sustain the levels of finance needed to make it an important tool in humanity's efforts to move civilisation back within planetary boundaries.

Myth # 5 - Forest protection projects are just bribing people to do nothing

“Isn’t it easy to pay a group of people to just leave their forest alone?”

The science is clear that global climate goals will be out of reach without halting deforestation very soon. Deforestation has many drivers, predominantly agriculture and livestock for their high economic returns. A recent report by Conservation International highlights that one of the most effective ways of slowing deforestation is to work with IPLCs to develop programmes that protect forests by giving the forest a greater value standing than when cut down. A successful forest protection (REDD+) project is focused on *transforming livelihoods* and increasing the value of forests beyond what a community would earn when the forest is converted to farmland, rather than just bribing people to do nothing⁷⁶.

For example, in one region deforestation may be caused by small-scale illegal gold mining which is ultimately driven by poverty. The forest protection project will work with communities to design alternative livelihood activities, like agroforestry and ecotourism that don’t cause deforestation, and use the carbon credit revenue to support this transition in the local economy. In another region, the cause of deforestation may be illegal seizure of Indigenous territory by cattle ranchers. A jurisdictional forest protection (JREDD) programme by the state government may use carbon funding to provide the

Indigenous group with more secure ownership of their land, while also investing to promote sustainable commodity production as an alternative across the region.

All nature-based projects that are part of the VCM need to prove additionality. Additionality in this context means that the climate benefit (for example, less forest being cut) would not have happened without the revenue from sale of carbon credits. Only forests that are under threat and that clearly need carbon finance to protect them, are eligible for carbon credits. While the concept may seem simple, a tremendous amount of science goes into determining the credibility of threats to forests and additionality.

Additionality is a critical component of carbon credits because it gives legitimacy to the fact that an entity can counterbalance its own emissions by virtue of creating an

emission reduction, removal or avoidance elsewhere⁷⁷.

There are a number of safeguards in place to ensure the ‘additionality’ of NCS projects. All projects need to demonstrate that the climate benefit is only occurring due to the financial incentive of carbon credit revenue. The climate benefit itself is articulated by comparing a ‘with project’ scenario to a ‘without project’ or ‘baseline’ scenario. Calculating a baseline scenario that models how much deforestation would have happened *without the carbon project* relies on complex science. This science is improving and will continue to do so. See myth 4 above.

A high-integrity VCM can build resilience and transfer wealth to the world’s most vulnerable countries, and support sustainable development and the livelihoods of IPLCs.



© Roshni Lodhia/Carbon Tanzania

© Jeremy Bezanger/Unsplash



Human and Indigenous rights safeguards

Reporting on human and Indigenous rights safeguards is necessary to ensure the integrity of any NbS. Successful forest protection projects work with IPLCs throughout project design and implementation. When IPLC's rights are respected and upheld throughout the process, forest protection projects reach their potential to protect forests and improve the livelihoods of those living in and around the protected ecosystem.

With current trends of forest loss and new frontiers of deforestation appearing regularly, it is projected that, in the future, deforestation is expected to encroach into countries with high forest cover and low deforestation (HFLD). If this were to happen, approximately 170 billion tonnes of CO₂e would be emitted by 2050⁷⁸.

HFLD status should not be taken for granted as a permanent land classification; rather, it should be acknowledged that this status is achieved through active and ongoing efforts to reduce the risk of deforestation. Many HFLD countries and jurisdictions do not have sufficient capacity, or the right economic incentives to protect these forests from rising external threats. Between 2010 and 2019, five countries lost HFLD status and we cannot afford for this to be repeated in the coming decade. Efforts need to be made to prevent the remaining HFLD countries from losing their HFLD status.

According to critics, HFLD countries should not have access to carbon finance as they do not meet the additionality criteria set out in the VCM. However, forests across the world are under threat. In 2021 alone we lost 11.1 million hectares of tree cover⁷⁹. Intact forests are threatened by the same drivers that increase deforestation rates

worldwide. Encroachment becomes more widespread as agriculture, infrastructure, and extractive activities extend into previously remote areas.

Much of the land inhabited by IPLCs are located within HFLD areas. Making carbon finance available for HFLD jurisdictions could be an effective way of channelling finance to frontline protectors of forests.

We need to urgently develop financial incentives to protect our remaining forests. ART-TREES and the World Bank FCPF are now offering a market-based incentive to preserve the forests of these HFLD countries. For more information on this topic, see the [Tropical Forest Credit Integrity Guide](#).

By ensuring that climate finance reaches local communities and jurisdictions, it's possible to provide a financial incentive that protects forest ecosystems.

Myth # 6 - Nature-based carbon credits are cheap because they are low quality

“Nature-based carbon credits are cheap because they reflect low quality compared to high-priced tech removal credits.”

The current low price of nature-based carbon credits does not accurately reflect the quality of the credit, rather the complexities of a nascent market. A range of factors have impacted the current price of nature-based credits driven largely by demand-side actors. During the early years of generating nature-based carbon credits, demand was low leading to a surplus of credits in the market, and providing buyers with the power to demand low prices.

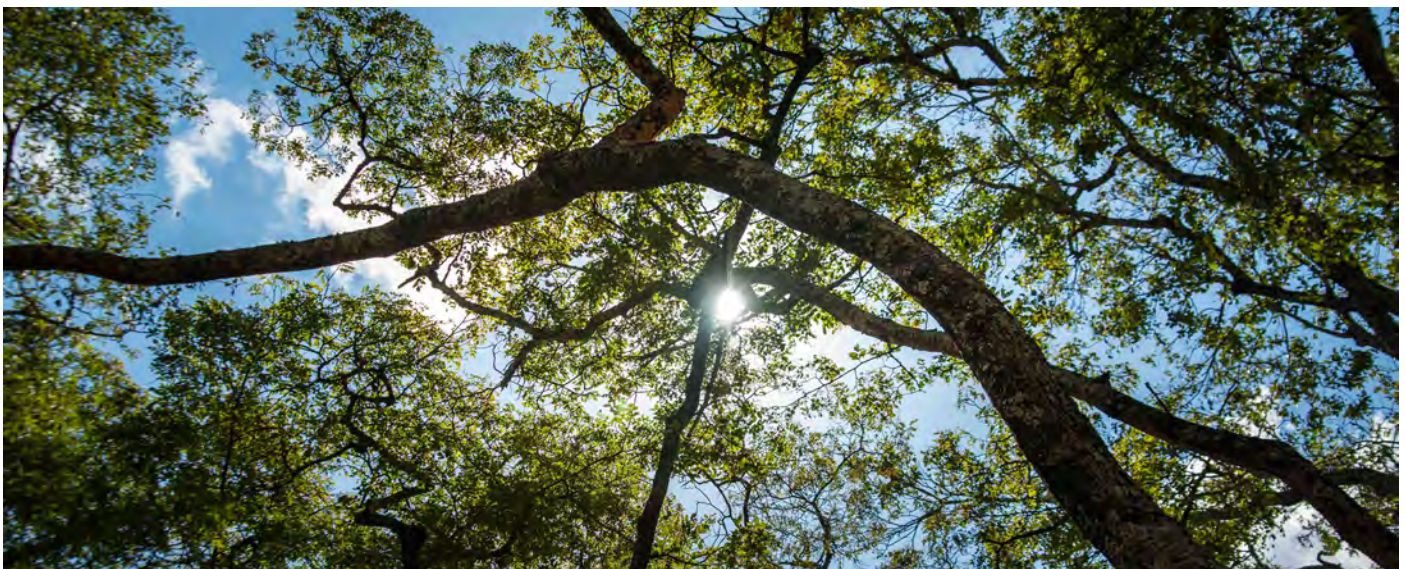
Today, carbon credit buyers feel more confident in purchasing newer vintages that reflect the most recent, more rigorous methodologies

forcing sellers to reduce the price of older vintages and driving down the average cost per credit. Additionally, the VCM has historically relied on intermediaries to connect the seller and the project developer which has also led to lower prices. This is changing with increased demand.

When done right, high-quality nature-based carbon credits deliver a range of social and environmental benefits in addition to climate action, unlike many higher-priced, technology-based carbon credits. Nature-based carbon credit projects can protect ecosystems and biodiversity, provide clean air and water, restore degraded lands, ensure long-term food security and support sustainable livelihoods, while also supporting adaptation and enhancing resilience to climate change.

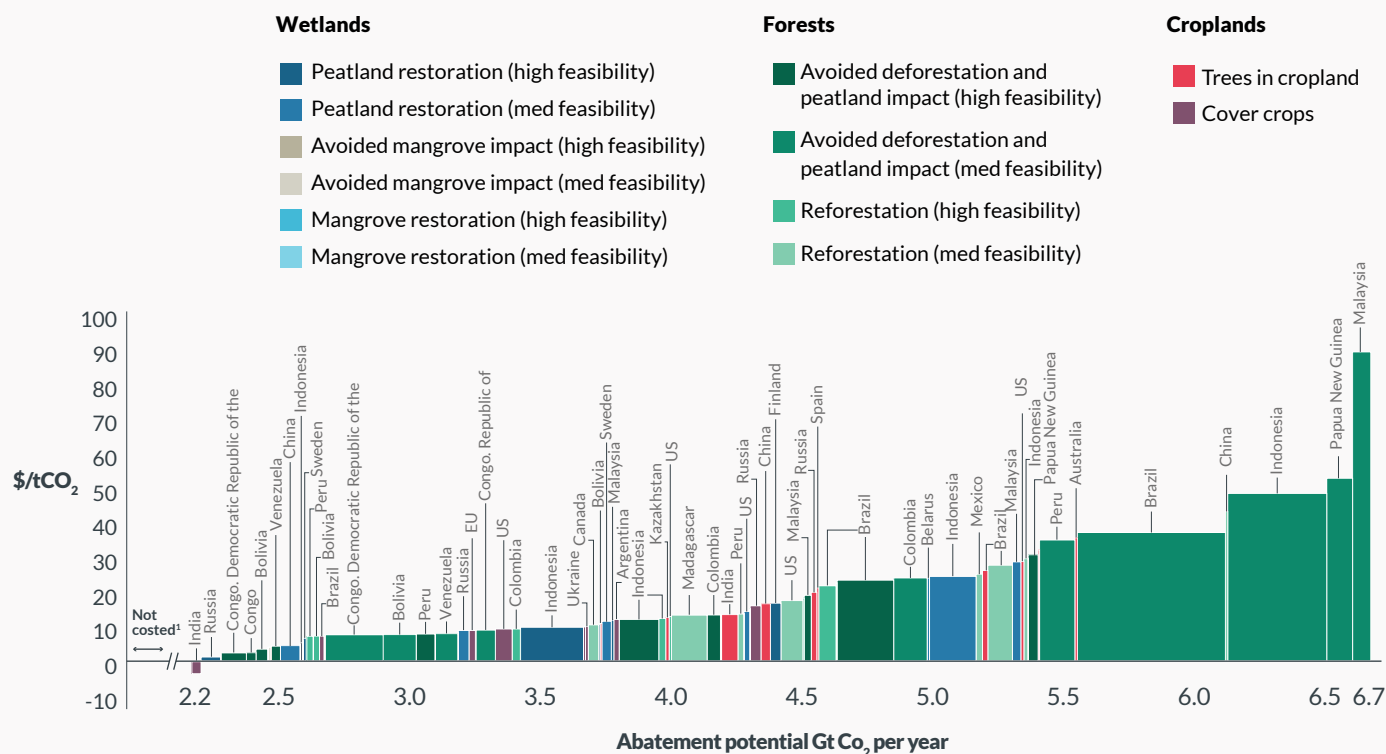
It is clear that these ‘co-benefits’ derived from biodiversity and ecosystem services are considerable. However, they are systematically undervalued or unvalued in day-to-day decisions, market prices and economic accounting. Perhaps if these benefits were referred to as ‘costed-in’ rather than ‘additional’, this would enable a better valuation of their worth.

By raising the price per tonne for nature-based carbon credits in line with additional co-benefits – or costed-in benefits – that the project provides we would be able to more accurately value the credit. A higher price can also incentivise project developers to design projects that address the biodiversity crisis and social and climate injustices through biodiversity and social co-benefits.



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Annual abatement potential of NCS



While low cost credits may stimulate demand and encourage participation in the market, nature-based carbon credits should aim to value the co-benefits of a project, to cost them in, whether they be economic, social, environmental or cultural.

In 2021, sales for the most common type of nature-based voluntary carbon credit projects (forestry and land use) were \$5.8 per tonne⁸⁰. This is far below the estimated value of the social cost of carbon at around \$100 per tonne⁸¹.

The current low cost of nature-based credits may cover the opportunity costs (the amount community members could have made from other land uses) in areas where these costs are low. However, the current price is not high enough to cover opportunity costs in areas

such as Indonesia and Malaysia where activities that degrade an ecosystem – such as growing valuable exports – attract a higher price. Prices are not high enough to keep a forest standing – it's more valuable chopped down.

Without a price per tonne that is competitive with the opportunity cost, then the community or landowner implementing the nature-based carbon project will sooner or later choose the alternative and more lucrative land use.

A higher price will better reflect the underlying costs and ensure that the communities or landowners will get a fair deal that reflects their opportunity costs. Better prices will incentivise landowners and communities to adopt NCS and will unlock new projects and deliver

larger volumes of high-quality nature-based credits to market.

We can incentivise reforestation with more diverse species of trees by increasing the cost per tonne for these project types. If the cost of growing an Indigenous tree and leaving it standing outcompetes the cost of planting monoculture plantations for timber, then it stands to reason that the landowner will opt to plant a diversity of indigenous species.

In order to deliver measurable climate mitigation results that address biodiversity and improve livelihoods, we need to increase the price per tonne so that it accurately reflects both the underlying costs to the community and the valuable benefits delivered to the global and local community.

Myth # 7 - Projects to avoid deforestation are worse than removal projects

“Aren’t projects to avoid deforestation doing little to address the climate crisis and actually making the situation worse?”

To get into a debate about using one type of credit over another is a dangerous distraction. Carbon removal and carbon avoidance projects must be combined with other solutions and global efforts to reduce global carbon emissions. We need to utilise all of the tools available to us if we are to meet our climate targets.




Currently, projects to avoid deforestation make up a large percentage of all climate mitigation projects. Their popularity is largely due to the numerous co-benefits the projects have for biodiversity and people’s livelihoods that are often not found in removals projects, as well as their relative low cost and ability to have a climate impact much more quickly.

Both removal and reduction credits represent one tonne of CO₂e. Removal credits represent one tonne of CO₂e being removed from the atmosphere either through nature

such as tree growing, or through technological solutions including direct air capture (see myth 7 part 1 for limitations around DAC).

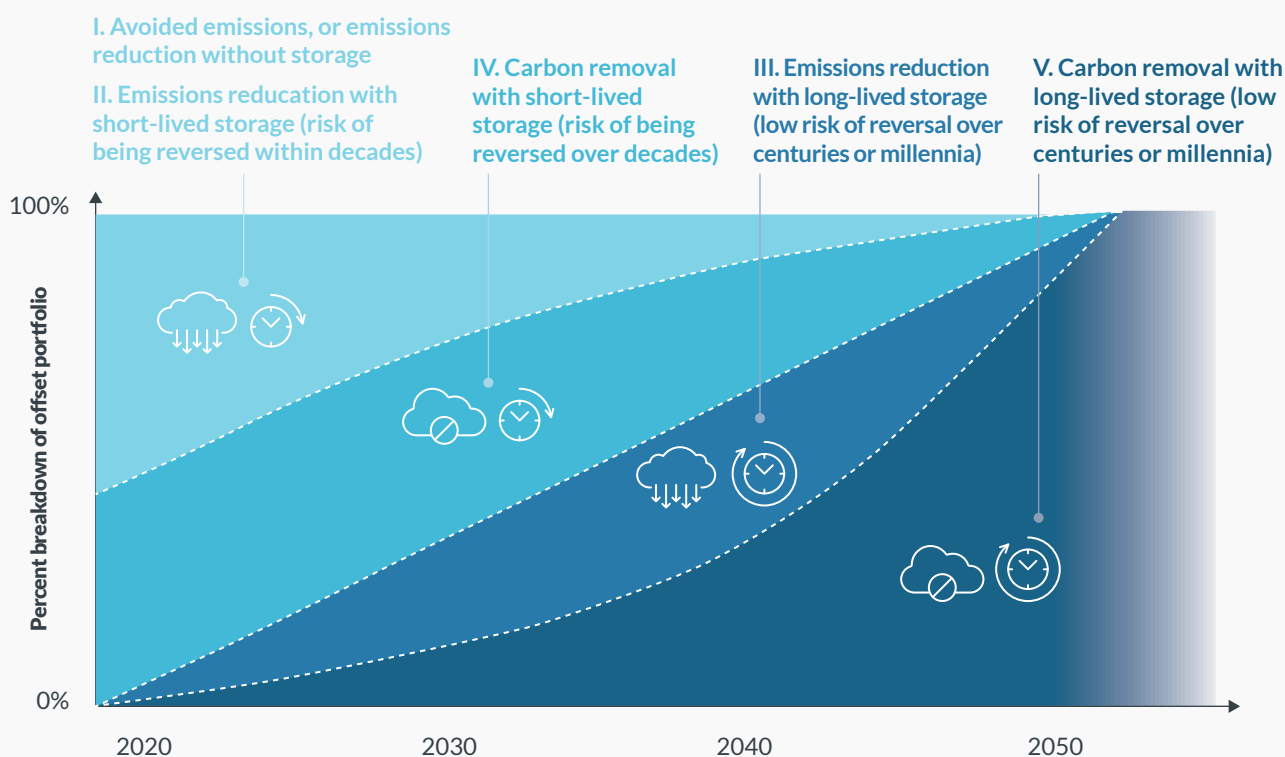
Credits from avoided deforestation represent one tonne of CO₂e and come from projects that have prevented emissions from being released, often through protecting threatened forests or improved waste management systems.

There are benefits and disadvantages to both approaches as outlined in the table.

Reductions and removals			
	 Emissions reduction I.e. REDD+, cookstoves, renewables	 Nature-based removals I.e. Afforestation, Reforestation and Restoration	 Direct Air Capture (DAC)
Quality (considering climate impact only)	On a spectrum, from bad to very good	On a spectrum, from bad to very good	Too early to say – potentially high quality, but also specific concerns remain around life cycle impacts
Scale of potential impact in this decade	High (billions of tonnes/year)	High (billions of tonnes/year)	Low (millions of tonnes/year)
Approximate cost per tonne	\$10-15	\$15-30	\$600-2,000
Co-benefits	On a spectrum, from small to very big	On a spectrum, from small to very big	Zero, potentially negative

<https://www.sylvera.com/blog/carbon-removals-vs-avoidance-a-dangerous-distraction>

Oxford principles – net-zero carbon offsetting mix



Source: <https://www.smithschool.ox.ac.uk/sites/default/files/2022-01/Oxford-Offsetting-Principles-2020.pdf>

Carbon removal credits are sometimes considered easier to **track and calculate**. While this may be true for established carbon removal solutions like reforestation, others, such as biochar, mineralization, or direct air capture (DAC) are very nascent approaches with many key science questions as yet unresolved. On the other hand, concerns have been raised over the ability of forest protection projects to accurately quantify their climate benefit. Strong investment in improved science and

learning by doing are the solution in both cases. New approaches like jurisdictional baselines or dynamic baselines (originally developed for the biomedical field) for forest protection projects are already replacing older scientific approaches and have great potential. Similar efforts are needed to continually improve early-stage carbon removal options, so they are ready when the world needs them in 10-20 years.

While investments in carbon removal technologies have grown considerably over the last few

years, most technologies are still in the early stages of development and only take a small percentage of the market share. Currently, pure removal projects make up only 3% of all projects issuing credits over 2021 and 2022 YTD, while projects that tend to include a mix of removals and reductions represented only 13%⁸².

The IPCC have made it clear that, before 2030, a focus on avoidance ahead of removals is necessary to avoid an overshoot and reliance on future carbon dioxide removal (CDR)⁸³.

Myth # 8 - You can't use credits from forest protection projects on your pathway to net zero

“There are too many GHG emissions in the atmosphere – don't we need to focus investment on removing emissions from the atmosphere in order to meet net-zero targets?”

With vast amounts of finance being deployed to tackle the climate crisis through carbon markets, discussions are arising as to whether avoidance or removal credits are the best solution for companies to use on their pathway to net zero.

However, the sheer scale and impact of the climate crisis means we must take ambitious action both now and

in the future. Credits from forest protection (REDD+) projects are immediately available and scalable climate solutions. The science is clear that global climate goals are out of reach without halting deforestation in the very near term. In the coming decades, once the world has eliminated deforestation emissions and greatly reduced industrial emissions, removals credits from nature (about half of all NCS), such as reforestation, and from emerging technological solutions, will be essential. These removals solutions need investment now and should be supported in tandem with credits from halting deforestation.

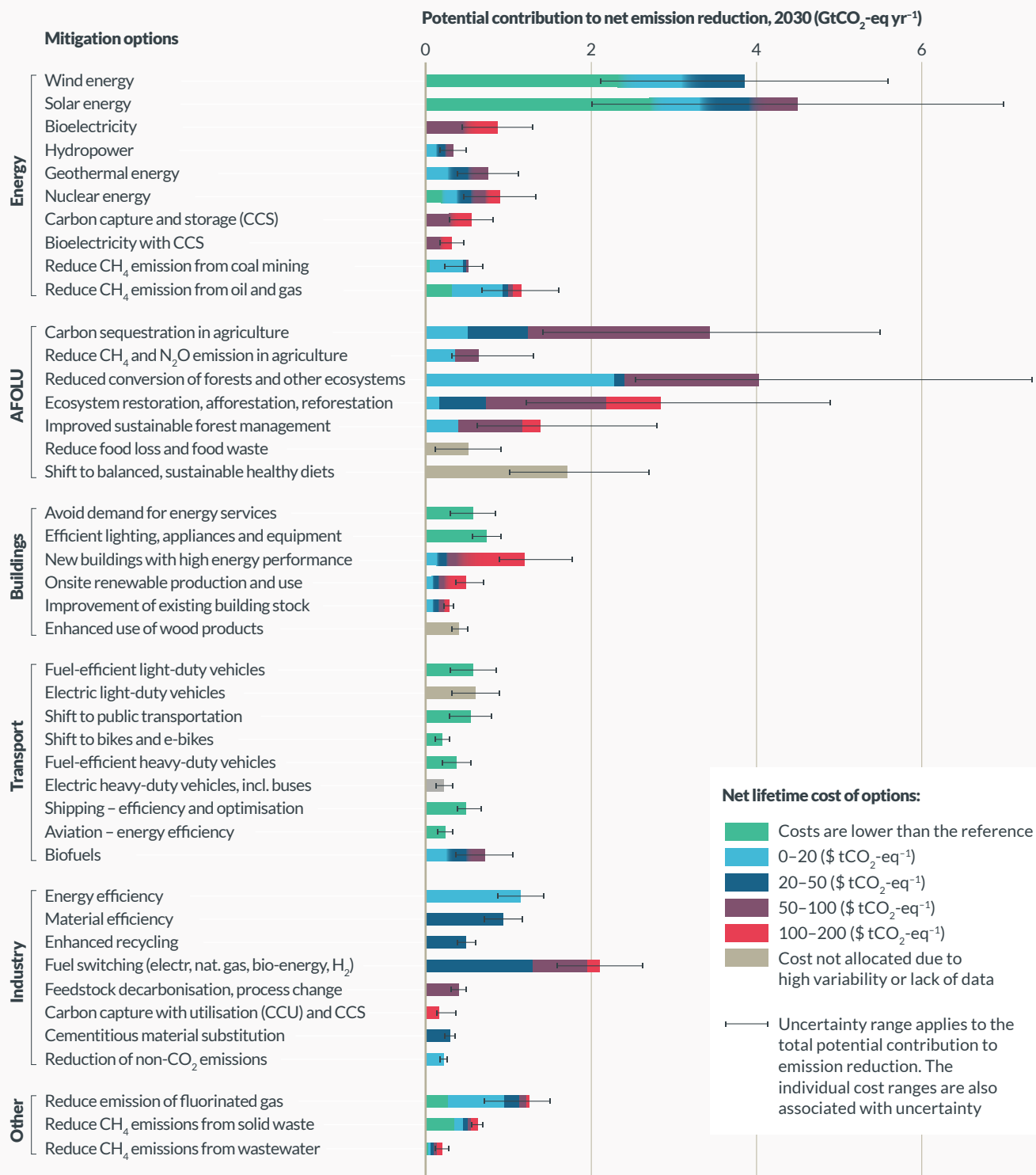
Companies need to both be on a science-based pathway to net

zero by 2050, with appropriate near- and mid-term milestones, and invest in protecting, restoring and sustainably managing land and nature. Additionally, companies should look beyond their value chain and invest in beyond value chain (BVC) mitigation. It is imperative to do both.

The climate crisis impacts every aspect of our lives and economy and requires the deployment of every tool we currently have available. To focus only on removing emissions while we continue to pour more GHG emissions into our atmosphere through for example, deforestation, will result in us missing our global climate goals.



Overview of mitigation options and their estimated ranges of costs and potentials in 2023



Source: https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf (p42)

Myth # 9 - VCM will never grow because it's voluntary

“Why would I invest in a voluntary market - what's the point?”

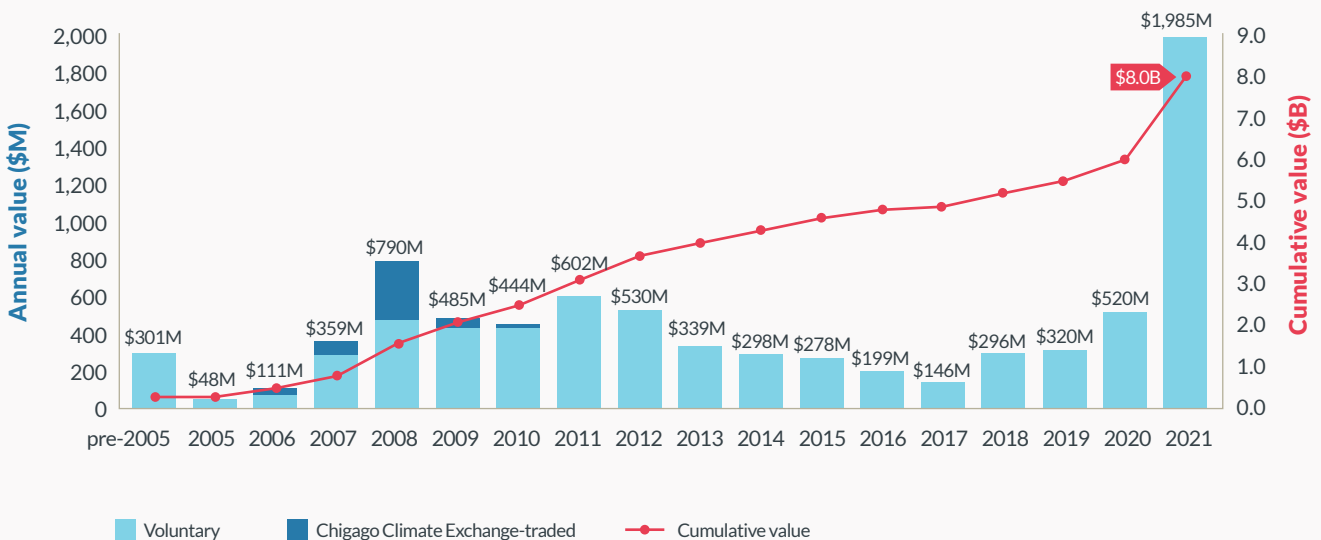
The voluntary carbon market evolved to fulfil the public purpose of voluntarily reducing GHG emissions from the atmosphere to the greatest extent currently possible. If it is not leading to an overall increase in climate action, then it is not serving its purpose. All stakeholders must rally around a shared mission to ensure the VCM fulfils its potential to support the Paris Agreement, global biodiversity targets, and Sustainable Development Goals (SDGs).

Unlike in compliance markets, all action in this market is purely voluntary. Nobody is requiring any of the companies involved to do anything in respect of climate change. As a result, even one dollar of investment represents more than what would have otherwise happened, as long as of course they are not advocating against mandatory requirements. A dynamic, credible and efficient VCM could contribute one billion tonnes (GtCO₂) of genuine and additional annual emission reductions or removals by 2025⁸⁴. The VCM enables organisations to raise their ambition to support global efforts to net zero by

2050 – above and beyond just decarbonising their own business emissions footprint.

The value of the VCM reached \$2 billion in 2021 and could be worth between \$5–30 billion per year by 2030⁸⁵, with perhaps two-thirds of this channelled into nature-based solutions (NBS). The VCM could therefore help fill existing gaps in climate finance for NBS.

Voluntary Carbon Market Value, pre-2005 to 2021



Source: <https://www.ecosystemmarketplace.com/articles/todays-vcm-explained-in-three-figures/>

The VCM must be built on the basis of social and environmental integrity, with strong governance, safeguards, transparency and inclusive participation. Scale without integrity is not an acceptable outcome; integrity is a precondition of an effective market. Without integrity, the VCM will not fulfil its potential to channel finance in line with the Paris Agreement climate goal. If we create the conditions to ensure high-integrity in the generation, trading and use of carbon credits, a powerful price signal will emerge that provides effective incentives to ensure the VCM mobilises additional capital, and effectively channels it towards genuine emissions reductions and removals.

A high-integrity VCM has the potential to mobilise, at speed and scale, billions of dollars (that wouldn't otherwise be available) into climate mitigation that wouldn't otherwise happen, helping the world to meet its climate goals. The amount of attention and investment the market has garnered in recent years has helped expedite climate mitigation.

Indeed, the word “voluntary” doesn't reflect the reality of a market that has been built with rigour over the course of 20 years. It is a verified, scientifically-based market which has been through thousands of project audits and is funded by billions of dollars of investor capital. In fact, there are calls to start calling it the “verified carbon market”⁸⁶. Failure of the market now would slow humanity's pathway to net-zero emissions and derail financial innovation in other ecosystem services.



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Myth # 10 - National, jurisdictional and project level carbon projects can't co-exist and are in competition with each other

“Why would I work with a small project when I can work at the scale and reliability of country-level credits?”

Historically, forest protection (REDD+) projects⁸⁷ have been relatively successful at slowing or

halting deforestation in targeted areas⁸⁸. However, deforestation has continued elsewhere. There is emerging consensus that a rapid transition to jurisdictional-scale crediting for forest-based emissions reductions and removals, including fully nested projects, is critical for enhancing environmental and social

integrity and for enduring outcomes. Jurisdictional forest protection (JREDD) programmes use a similar approach to REDD projects but are scaled up to cover an entire jurisdiction – which could be an entire country, or a state within a country, or a region.



Jurisdictional approaches to REDD+ can make a significant contribution to preserving the world's forests:

Change is driven across four key challenges:

Scale

The large area covered by a JREDD programme makes it several orders of magnitude larger than even the biggest REDD+ project.

And it is the sheer scale of these programmes that is the key to their potential. Jurisdictional approaches are backed by their local communities and their governments with the authority to enforce land use.

Integrity

Jurisdictional approaches offer strong assurances of environmental and social integrity because they require accounting for the actions of all actors across a jurisdiction.

This makes the measurement and monitoring of environmental integrity risks easier to manage.

Inclusion

The prime mover in a jurisdictional approach tends to be a state or regional government, but it can also be a coalition of Indigenous peoples.

If local communities, who know their landscapes and ecology better than anyone, engage in the process, the outcomes are far more likely to be sustainable and effective.

Funding

Between \$100 billion and \$390 billion per year will be needed by mid-century in order to save sufficient forests and keep the planet on the pathway to reach our climate goals. Yet just \$20-24 billion of public finance was committed to REDD+ activities over seven years from 2008-2015.

Jurisdictional approaches can accelerate flows of public and private financing. Governments, international organisations and voluntary carbon market actors have set up frameworks to help national and subnational governments in forest-rich countries to access market-based payments for successful forest management initiatives that take place across entire landscapes.

Key examples of recent developments in jurisdictional REDD+ and carbon markets are:

- Guyana issues credits under the ART ([Architecture for REDD+ Transactions](#))
- Mozambique received the world's first payment for independently verified jurisdictional REDD+ emission reductions
- Costa Rica, Ghana and Indonesia have received payments from FCPF

Since 2021, Mozambique, Costa Rica, Ghana and Indonesia have received payments from the Forest Carbon Partnership Facility (FCPF). So far, Guyana is the only JREDD programme to have issued credits, under the ART standard⁸⁹. While others are in development, hurdles are holding back many willing local authorities, including political will when there are no guarantees of finance. On the other hand, investors are also hesitant to commit to buying credits from a jurisdictional project or to upfront payments until a government guarantees the long-term existence of a project. The Verra standard requires projects to last for a minimum of 30 years⁹⁰, which is a challenging promise to make when governments remain in place for four to six years.

There are many jurisdictions developing programmes to reduce deforestation. While some have applied existing methodologies, programmes are yet to reach the stage where substantial payments can flow in exchange for credits. There are also many jurisdictions that do not have JREDD programmes, and we do not have time to wait for these programmes to materialise. In these instances, we need REDD+ at a project level that is producing high-quality credits to catalyse investment in these areas.

Nested REDD+

To bridge the transition to JREDD, site-level REDD+ projects need to be integrated into the jurisdictional REDD system, while allowing them

to continue generating and trading carbon credits. Nested REDD+ projects refers to a patchwork of approaches that seek to create a common accounting system and/or crediting system in order to integrate existing REDD+ projects into jurisdictional REDD programs⁹¹.

Well-designed nesting of REDD+ projects has the potential to address leakage, support JREDD programmes in accessing finance and sharing benefits, support and collaborate with governments to reduce emissions and improve government MRV systems.

Nested projects should also be working with governments to ensure that, when the time comes, they will be able to either nest into a country's NDC or make corresponding adjustments as per Article 6 of the Paris Agreement⁹².

Segment	Project-level REDD+	Nested REDD+	Jurisdictional REDD+
Scale	Defined area of forest	Defined area of forest	Entire jurisdiction (national or subnational)
Baseline	Independently set for that specific area	Variety of approaches	Average deforestation across the whole jurisdiction, aligned with international reporting standards
Framework	Independent standards (e.g. Verra) or national methodologies	Independent standards (e.g. Verra JNR)	To date, mostly national or international frameworks (e.g. World Bank's FCPF). Independent standards emerging e.g. ART TREES
Founding	To date, mostly through VCM	Nested projects are only beginning to be developed	To date, mostly results-based financing; imminent plans to access VCMS
Pros	<ul style="list-style-type: none"> • Often easier to implement smaller scale • Proven success • Local context and needs considered 	<ul style="list-style-type: none"> • Better monitoring of leakage • More reliable baselines • Easier transition than implementing jurisdictional approaches 	<ul style="list-style-type: none"> • Economies of scale e.g. MRV costs • Leakage automatically considered • Land rights can be more clearly addressed
Cons	<ul style="list-style-type: none"> • Baselines often inflated • Hard to monitor leakage 	<ul style="list-style-type: none"> • Methodologies yet to be proven • Ignores local drivers of deforestation 	<ul style="list-style-type: none"> • Complex to manage • Challenging to obtain enough samples to set baselines • Benefit sharing risks

Source: <https://www.sylvera.com/blog/an-introduction-to-jurisdictional-redd>

Myth # 11 - Corporate claims on climate are nothing but greenwashing

“It’s not possible to properly compensate for a company’s emissions and impact on nature, it’s purely a PR exercise to make a company seem like they are better than they are.”

Research shows that companies with a real and long history of using credits have in place – and have achieved – more advanced reduction strategies than those that don’t. Companies using credits also tend to use them in the way they are intended: to go beyond their internal reductions by counterbalancing emissions that are too costly or impossible to address with today’s technologies, otherwise known as residual emissions⁹³.

Any discussion on climate action via the VCM should be framed around the relatively short-term role carbon credits can play in the transition towards compliance with the Paris Agreement, or as a complementary and supplementary commitment to finance emissions reductions.

Scope of corporate commitments

The VCM is not an alternative to rapid decarbonisation. Corporates must prioritise cutting emissions from their internal operations, investment portfolios, and supply chains – including those from forests, land use and agriculture (FLAG) or agriculture, forestry and other land uses (AFOLU).

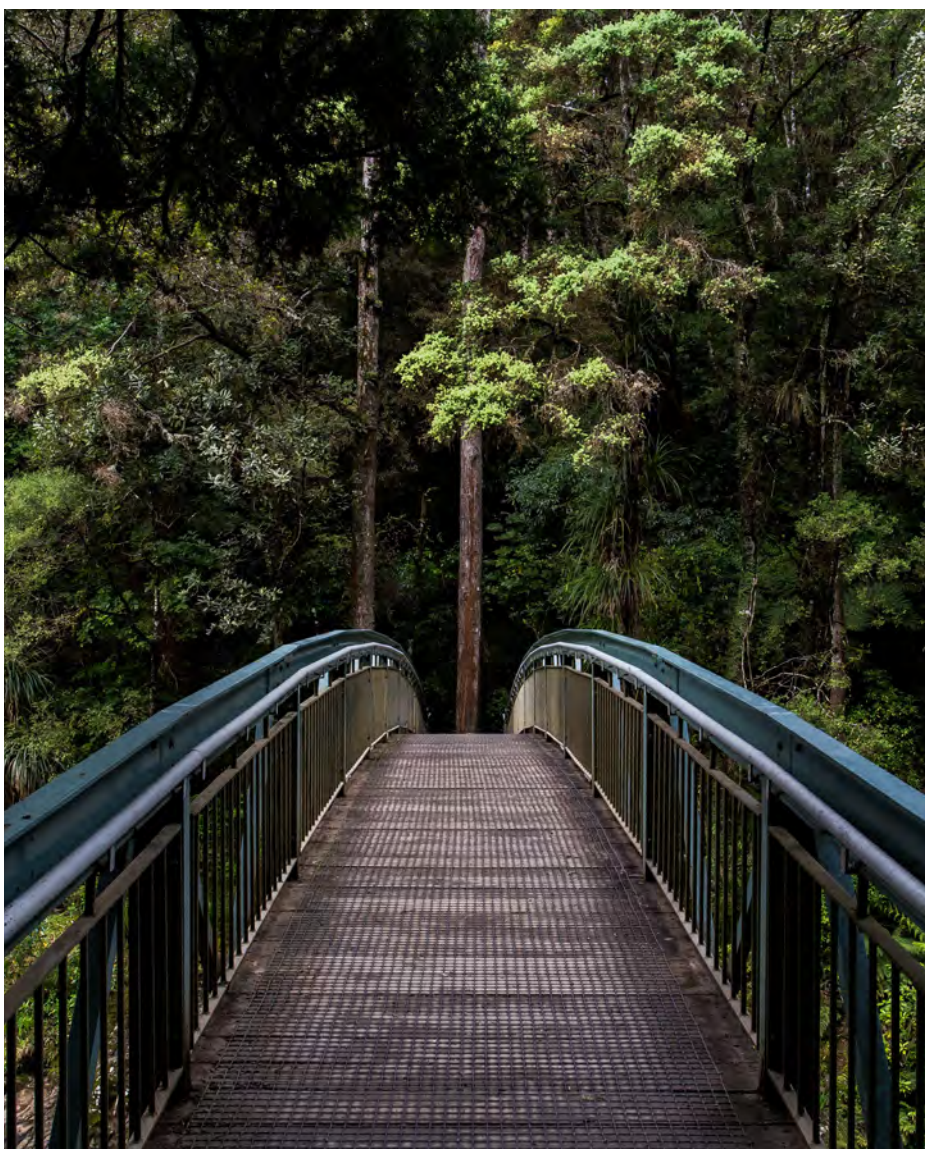
Climate science is demanding corporations take a both/and approach: investing both in emission reductions and in nature-based solutions.

Investment in high-integrity NCS is an essential component of corporate leadership on corporate climate action in addition to emission reductions. This includes compensating residual emissions

with high-integrity carbon credits, including prioritising nature-based credits in the near term.

Carbon credits

Carbon credits only work as a climate solution if done in tandem with ambitious internal corporate action to reduce emissions (see myth 1).



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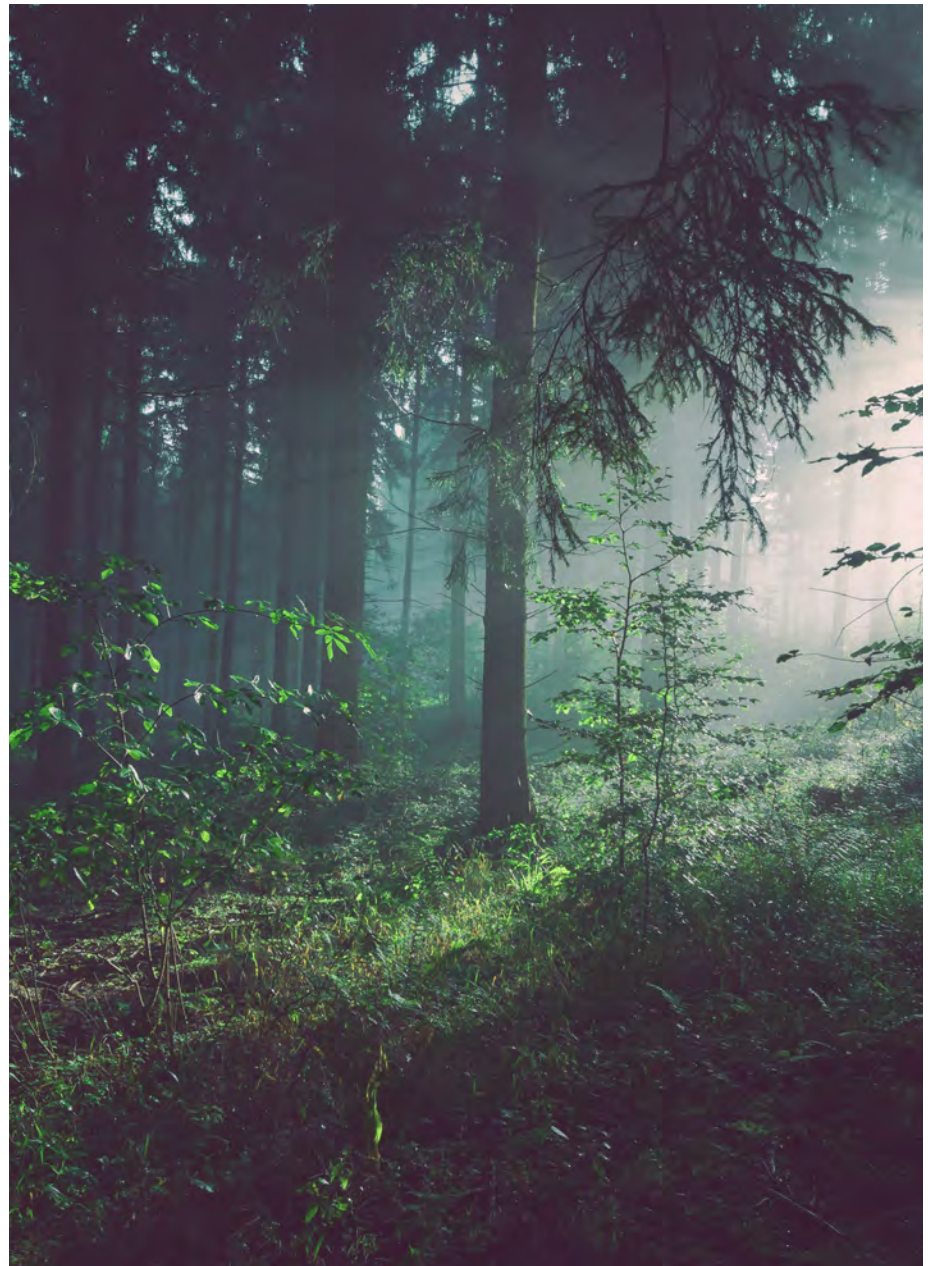
High-integrity markets

All information relating to the market and its procedures must be open and publicly available so as to ensure the integrity of projects, transactions, and market outcomes. This will expose bad actors and build confidence in the market. The entire sector, including GHG accounting programmes, needs to move towards regulation in order for this to be achieved.

There are currently two prominent initiatives designed to regulate and hold actors accountable on both the supply and demand sides of the market:

1. The Integrity Council for Voluntary Carbon Markets (IC-VCM) is working to ensure that all carbon credits in the market represent real emission reductions (or removals).
2. The Voluntary Carbon Market Integrity Initiative (VCMI) is working to ensure that claims made by companies using carbon credits are accurate, thereby helping to ensure that the use of carbon credits complements internal reductions.

Carbon markets have emerged over several decades of piloting, research, and implementation by thousands of scientists, policymakers, and environmentalists from a number of disciplines, and continue to evolve. In particular, the rules governing GHG crediting programmes have evolved through a process of expert review and public consultation that draws on factors including scientific evidence, best practices, and technological advances.



Corporate claims

Carbon neutral was once a popular term to describe a company's actions to calculate the emissions associated with a product or business operations, and to compensate for these emissions through the purchase of carbon credits⁹⁴. This

term is becoming less frequently applied as we realise the importance of science-based net-zero claims. Carbon neutral may still have a place in the high-ambition pathway to net zero as a way to describe the use of high-quality carbon credits to cover all unabated emissions⁹⁵.

Greenwashing

Greenwashing, dishonest climate accounting and other actions designed to avoid deep decarbonisation employed by corporations decreases our chance of reaching net zero by mid-century. In order to address greenwashing, corporate claims need to be transparent and follow guidance from initiatives such as

the SBTi and the UN high-level expert group on net zero.

At COP27, the UN high-level expert group on net-zero commitments of non-state actors released a report to address greenwashing. The report is based on five principles and 10 recommendations to guide the future of net zero, and focused on the actions that need to be taken and those who regulate them⁹⁶.

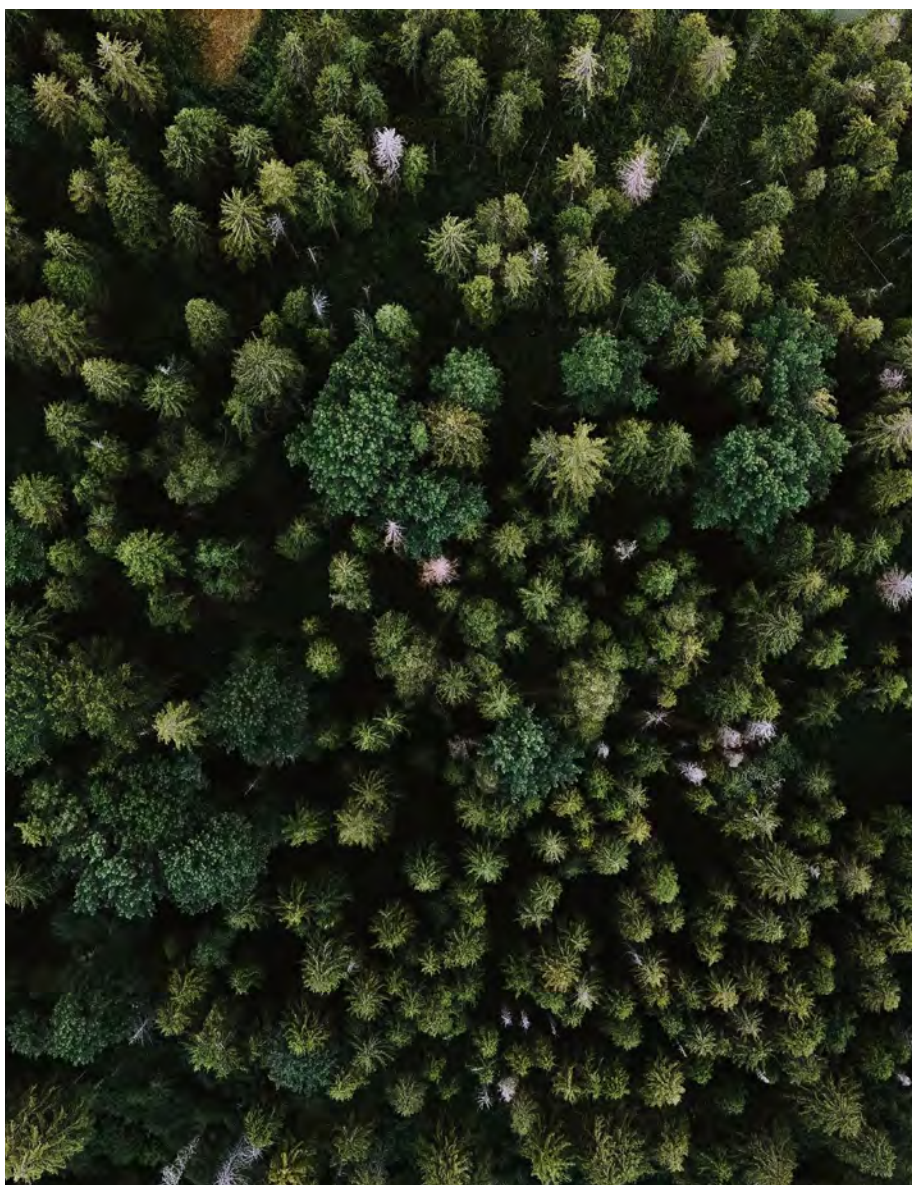
Greenhushing

With increased scrutiny over corporate claims about their commitments to address biodiversity loss and the climate crisis, a new phenomenon is arising: greenhushing. This is when organisations deliberately choose to under-report or hide their green or their environmental, social and governance (ESG) credentials from public view to evade scrutiny.

Greenhushing has the potential to become a problem for climate action if it starts to slow the expansion of corporate climate action from large corporations to small- and medium-sized enterprises.

It is clear that business has a critical role to play in addressing two of our most pressing issues – climate change and biodiversity loss. By investing in NCS, businesses can contribute significantly to reaching net-zero emissions by 2050.

We are very unlikely to stay within the carbon budget without companies investing beyond their value chains to protect, manage and restore nature on the pathway to net zero. The VCM is an important tool to allow companies to make these investments.



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info@nature4climate.org
nature4climate.org

