

The case for reforestation, restoration and forest protection.



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Forests are one of the most critical ecosystems on our planet, covering approximately one-third of the Earth's landmass. They are home to most terrestrial species, and they provide a wide range of ecosystem services, such as carbon sequestration, water regulation, and soil conservation. They are also home to diverse communities and support the livelihoods of millions of people worldwide.¹

Snapshot: the benefits of forests to people, climate and biodiversity²



Trees and forests are major means for combating climate change. Forests contain **662 billion tonnes** of carbon, which is more than half the global carbon stock in soils and vegetation. Despite a continued reduction in area, forests absorbed more carbon than they emitted in 2011–2020 due to reforestation, improved forest management and other factors.



About

33 million people

– 1 percent of global employment – are estimated to work directly in the formal and informal forest sector. The sector contributed (directly, indirectly and induced) more than US\$ 1.52 trillion to world gross domestic product in 2015 (latest data available).



Forests provide habitat for 80 percent of amphibian species, 75 percent of bird species and 68 percent of mammal species, and tropical forests contain about 60 percent of all vascular plant species.

The world's forests, however, have long been under threat. Since 2000, annual rates of tree cover loss have risen and approximately 12% of tree cover has been lost.³ The resulting impact has been catastrophic for biodiversity, which is declining faster than at any time in human history. Deforestation and other land-use change are responsible for 23% of global greenhouse gas emissions.⁴

Protecting the forests we have, restoring those that have been degraded, and growing new forest resources are all critical to mitigating and adapting to climate change, preserving biodiversity, and developing sustainable economic livelihoods.

This white paper sets out how forest protection, restoration, and commercial reforestation can make a vital contribution to tackling the twin challenges of climate change and biodiversity loss while delivering positive social impact. It highlights the tremendous potential for these solutions in Latin America, where trees may grow faster than anywhere in the world.⁵ Latin America has perhaps the most modern and sophisticated forest industry worldwide and great potential for natural climate solutions (NCS) that support sustainable development in critical biodiversity areas.

Image credit: TIG



Forests and climate mitigation

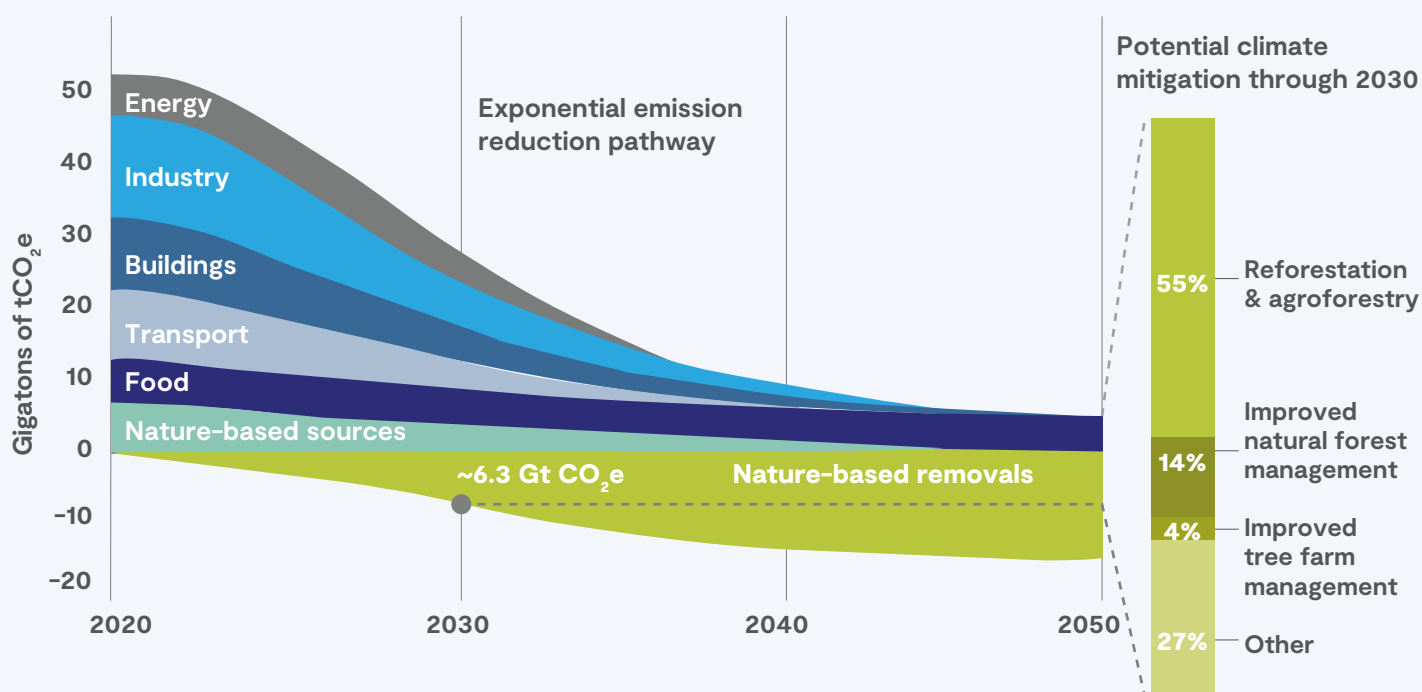
Forests play a crucial role in regulating the Earth's climate by sequestering and storing carbon dioxide from the atmosphere. It has been estimated that the world's forests sequestered about twice as much carbon dioxide as they emitted between 2001 and 2019, providing a 'carbon sink' that absorbs a net 7.6 billion metric tonnes of CO₂ per year, one and a half times more carbon than the United States emits annually.⁶

Forest conservation, restoration and management are among the most significant natural climate solutions (NCS) – a portfolio of land use activities that avoid greenhouse gas emissions and increase carbon storage. Research shows that NCS could provide approximately one-third of the climate mitigation needed by 2030 to keep global warming below 2°C, in line with the Paris Agreement, with forests providing nearly 75% of this total.⁷

Among the various NCS pathways, reforestation provides the single greatest opportunity to mitigate climate change, followed by forest protection and improved management. Crucially, reforestation also offers the potential for carbon removals by absorbing carbon from the atmosphere in rapidly growing young trees, rather than simply avoiding new emissions. Reforestation represents the only large-scale carbon removal technology that can be readily deployed today, enabling low-cost, scalable, and highly feasible action. Reforestation not only increases the amount of carbon sequestered but can also improve biodiversity, soil health, and water quality.⁷ Forests can also generate economic benefits for forest-dependent communities and supply renewable, sustainable biomaterials to the global bioeconomy.

Climate opportunity: Growing need and efficacy of carbon removals⁸

Natural climate solutions are approximately 30% of the solution and only 3% of the finance⁹



Forests, biodiversity and other ecosystem services

As highly complex ecosystems, forests are also critical for maintaining biodiversity. They are home to most terrestrial species and contain approximately 80% of the world's terrestrial biodiversity.¹⁰

Deforestation and forest degradation lead to the loss of species and ecosystems, accelerating the current biodiversity and climate crises. Forest restoration and good management practices can help to restore habitat for endangered species, improve habitat connectivity, prevent further biodiversity loss, and improve ecosystem resilience through practices such as thinning and fuels reduction. By securing the participation of local communities in forest restoration programs, forests can be brought back to health in ways that secure durable benefits for people and nature.

Forests also deliver critical ecosystem services that support human well-being and economic growth. Forests can support temperature regulation, groundwater infiltration, and soil retention.¹¹ In contrast, deforestation releases carbon to the atmosphere, and can increase soil erosion, reduce water quality, and increase risk of species extinction.¹² Forests can also play important roles in regulating regional climate. For example, in both the Amazon Basin and the Brazilian Cerrado, deforestation is associated with a reduction in rainfall that could threaten the survival of entire forest ecosystems.¹³ Where deforestation has occurred, forest restoration has the potential to restore these critical ecosystem functions.



Image credits: TIG



Forests and communities

Forests also play a vital role in supporting the livelihoods and cultures of people all over the world. They are home to 300 million people¹⁴ – farmers, smallholders and others who live on the land – and, in addition, it is estimated that more than 1.6 billion people’s livelihoods depend on forests for timber, food, fuel, and jobs.¹⁵

For many rural communities and indigenous peoples, forest resources lie at the centre of social, political, and economic life and are an important source of community livelihood, nutrition, and employment.

Forest products provide essential food, materials, nutrients and medicines for rural populations, keeping many people out of extreme poverty. For people located in these areas, almost one-quarter of their income can derive from forest sources – a contribution which is greater than that of wage labor, livestock, self-owned businesses or any other category aside from crops.¹⁶

Rural economies in many countries are supported by the forest industry, creating jobs and wealth for populations where there are few alternative

options. Forests produce more than 5,000 types of wood-based products, and generate annual gross value-added of just over US\$ 600 billion, nearly 1% of global GDP – and in some countries that contribution is much higher.¹⁷

Benefits for people are not only economic, but may also be social, cultural and spiritual. Forests and wildlife are a source of community tradition, folklore and spirituality. Traditional forest-related knowledge, that has accumulated over thousands of years, is profoundly linked to the cultures of many indigenous and forest-dependent communities. And growing bodies of research point to the profound benefits of exposure to forests and nature for mental and emotional health.



Image credit: TIG



The role of private finance

Despite the range of climate, biodiversity and social benefits that forest restoration and protection can provide, there is a substantial finance gap between what is needed to deliver these benefits and what is being provided now. It has been estimated that the financing gap to reverse the decline in biodiversity by 2030 is between US\$ 598 billion and US\$ 824 billion per year (US\$ 711 billion per year on average).¹⁸ It is increasingly clear that private finance, delivered from non-governmental sources, has a vital role to play in bridging the gap, given that financing for nature-based solutions amounts to just approximately US\$ 154 billion today.¹⁹

The private sector is increasingly aware of the value of nature for businesses and society. According to the World Economic Forum, US\$ 44 trillion of value (over half of the world's GDP) is generated in industries that depend highly (US\$ 13 trillion) or moderately (US\$ 31 trillion) on nature and its services.²⁰ But it is not just sensitivity to risk that is driving corporate action: there is also fast-growing awareness of the commercial opportunities which nature-based investments offer. It has been estimated that a new nature economy could generate US\$ 10 trillion in business value and create 395 million jobs by 2030.²¹

Climate positive commercial forestry and downstream investment into the bioeconomy are opportunities for NCS to provide commercial returns to investors and therefore to attract private capital. This opportunity to provide financial returns from investment in NCS is fundamental to mobilizing a portion of the approximately US\$ 59 trillion of private capital committed to net-zero by 2050 or sooner, as well as to providing opportunities for economic development for rural communities.²²

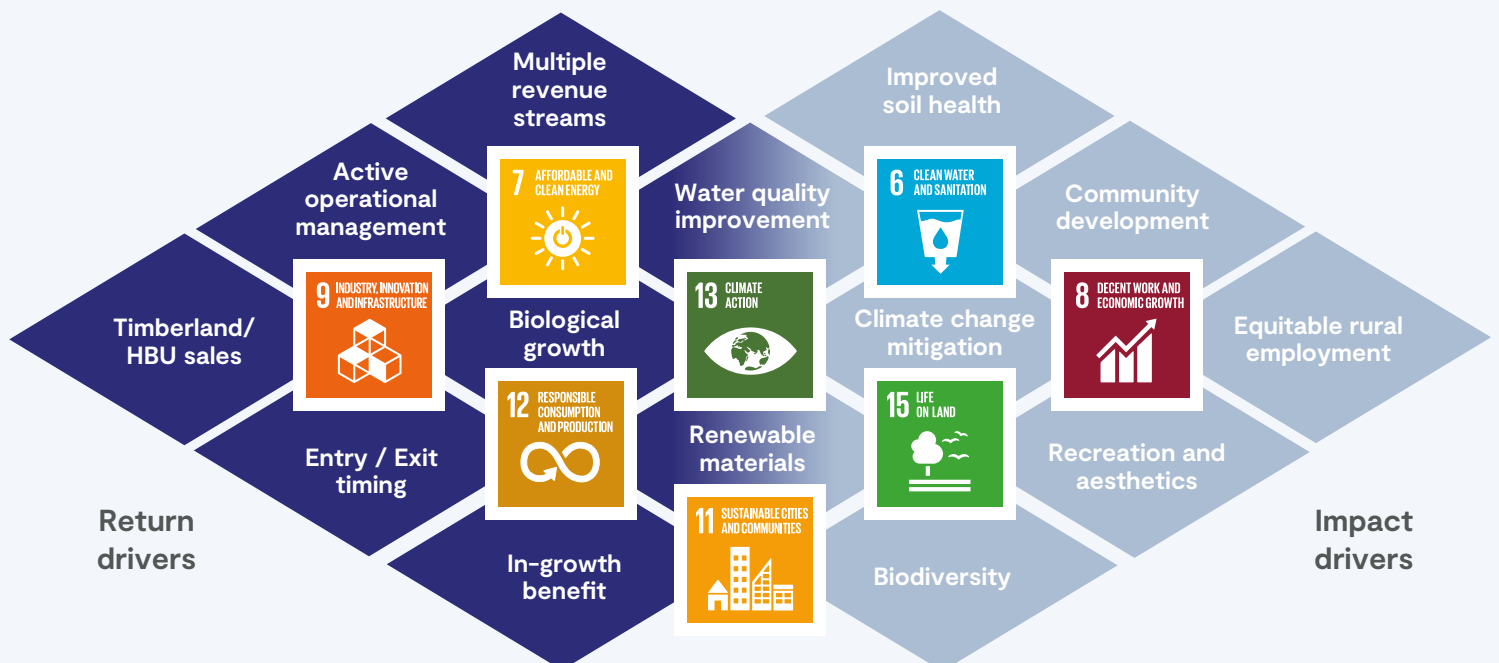
Further, there is reason to expect that NCS investments may be supported by long-term increases in demand for wood-based products. The FAO projects that global demand for primary forest products may increase by 37% through 2050,²³ potentially growing more rapidly as the circular bioeconomy's growth surges. It is projected that the supply of timber will continue to shift from natural forests to planted forests,

growing from 49% in 2013 to nearly 70% by 2050,²⁴ reflecting the greater demand for sustainable timber as we make the transition to a circular bioeconomy.

Sustainably harvested wood from planted and restored forests can be used to manufacture innovative products like cross-laminated timber (CLT), which can not only provide revenue to support further NCS investment and store carbon in newly constructed buildings for decades or longer, but can also reduce consumption of emissions-intensive materials like concrete and steel. Designers, architects, planners, builders, and consumers increasingly recognize the cost, customer, and carbon benefits of turning to wood-based products. This substitution can reduce the emissions associated with building materials and construction – which itself represents roughly 11% of annual global emissions²⁵ – by approximately 69%.²⁶

Timberland as an Impact Investment

Through sustainable management, return and impact become mutually reinforcing while both supporting multiple UN SDGs.



Latin America and the promise of NCS

NCS has the potential to deliver benefits around the world. But, nowhere is this potential greater than in Latin America, which offers approximately 30% of the potential for natural climate solutions globally.⁷

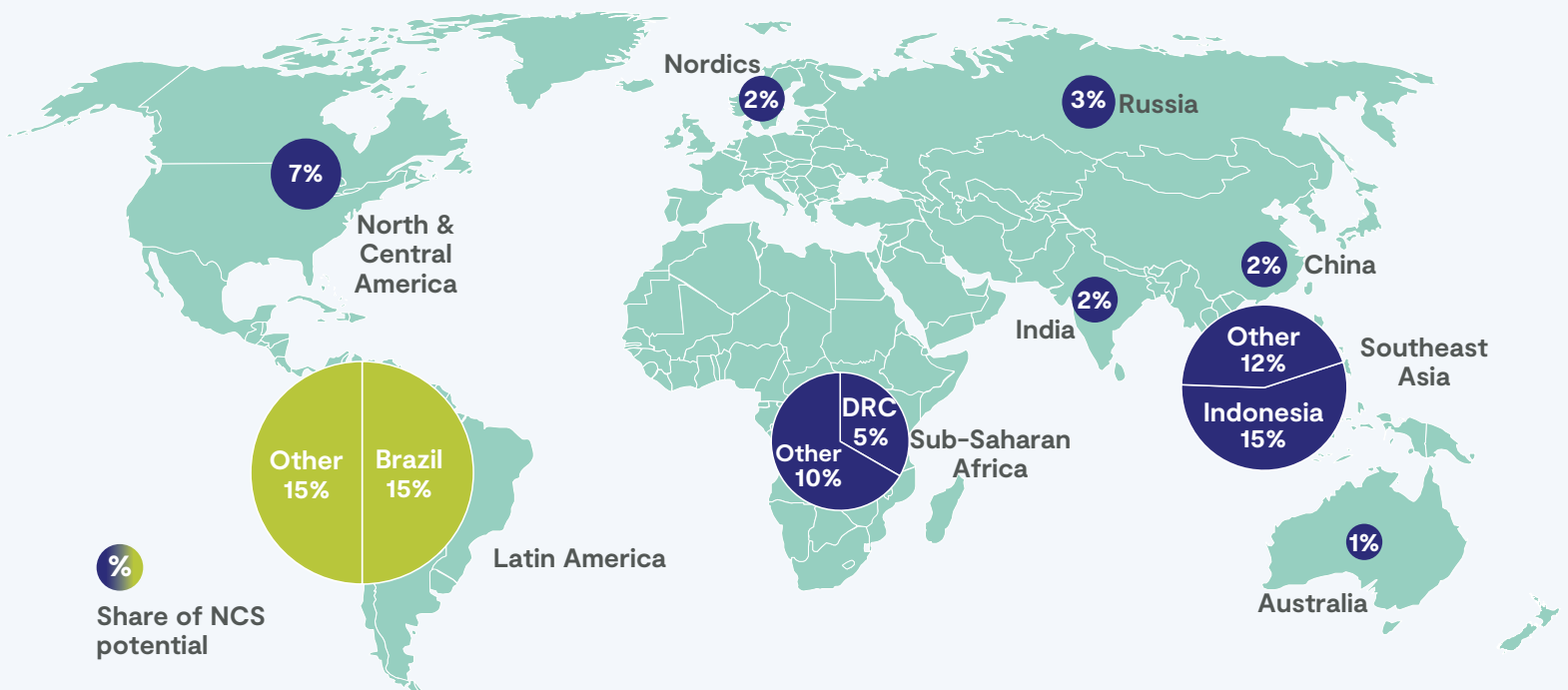
Much of this opportunity lies in Brazil, which is home to more than 170 million hectares of cattle pasture – much of which was once forest and is potentially suitable for forest restoration.²⁷

Brazil is home to approximately 10 million hectares of planted forests, which together represent just 0.2% of total global forested area.

Yet, given the region’s incredible productivity, Brazil’s tree farms produce approximately 11% of the world’s industrial roundwood.²⁷ Brazil’s potential for additional reforestation is significant, with good growing conditions, land availability, and a mature market for the development and use of forest products. Both commercial tree farms and naturally regenerated native forests grow faster in Latin America than anywhere else in the world. These rapid growth rates drive the financial value of commercial forests, and also drive high rates of carbon sequestration across both natural and planted forests, and point to the potential for significant expansion.²⁸

Climate opportunity: Latam Natural Climate Solution (NCS) potential

With 30% of global NCS potential, Latam is a large-scale investable opportunity to generate NCS-related carbon removals²⁹



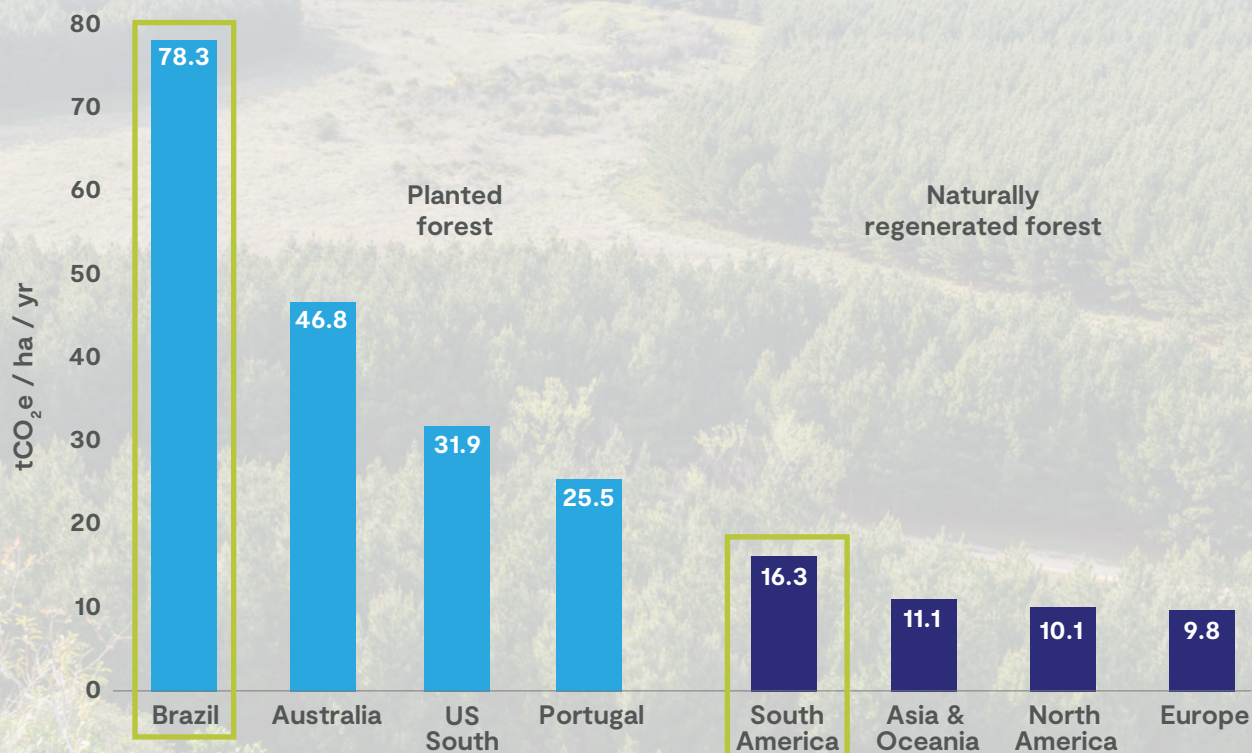
Integrated Landscape Investment

More than 300 GtCO₂e is stored in the world's forests today, and stopping deforestation is key to keeping this carbon out of the atmosphere while also maintaining most of the world's terrestrial biodiversity and supporting hundreds of millions of livelihoods.²⁷ Forest restoration can both actively remove carbon from the atmosphere and restore critical ecosystem functions that previous deforestation may have damaged or destroyed. Additionally, commercial reforestation and sustainable forest

management can provide high rates of carbon removal while also producing renewable biomaterials that can store carbon for extended periods of time and support the growth of a regenerative bioeconomy.

While any one of these actions – forest protection, natural forest restoration, commercial reforestation – can provide enormous benefits, their impact, and the scale at which they can be deployed, is much greater when pursued in an integrated manner.

Comparative carbon accumulation rates (tCO₂e / hectare / year) for planted hardwood forests and naturally regenerated forests in selected regions.³⁰



Forest protection can maintain biodiversity terrestrial carbon stocks, but does little to reduce atmospheric CO₂ below current levels or reverse historic damage to species and ecosystems; forest restoration can actively sequester carbon out of the atmosphere and restore ecosystem function, but on its own may not provide significant economic benefits to local communities or offer a financial return to investors; sustainably managed commercial tree farms can rapidly absorb carbon from the atmosphere and provide economic benefits to communities and private investors, but on their own may provide limited benefits for biodiversity and ecosystem services.

However, when pursued together, sustainably-managed commercial tree farms can provide

direct benefits to communities and enable private investment to flow into rural landscapes, while the biodiversity and ecosystem benefits of forest restoration and forest protection can build social license for NCS investment and enhance the resilience of landscapes into which investment flows. At larger and larger scales, such investments can help turn the tide on the biodiversity crisis, and provide the GHG removals that are critical to a climate-stable future.

Investment in alignment with a clear strategic vision can deliver social, climate and biodiversity benefits that are mutually reinforcing, creating a virtuous circle of action that delivers durable and far-reaching benefits.



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