

Natural climate solutions: the business perspective

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① Preface

The world is on track to surpass a 1.5°C global temperature rise as soon as 2040.

The UN Secretary General is holding a Climate Action Summit (CAS) during the UN General Assembly to build focus and highlight the need for more ambitious and urgent progress. We must set a bolder ambition to get on track towards achieving the Paris Commitments, and business can once again demonstrate leadership and action to address the climate emergency.

Ahead of the UN Climate Action Summit in New York City, WBCSD calls on companies to set a climate target aligned with what science says is needed to limit global warming to 1.5°C. **According to the IPCC special report Global Warming of 1.5 °C, limiting global warming to 1.5°C requires reaching net-zero CO2 emissions by around 2050.**

Reaching net-zero emissions for a company means reducing greenhouse gas (GHG) emissions where possible and balancing the impact of remaining emissions with carbon removals. This will result in no net impact on climate. It will require unprecedented level of action in several areas, including electrifying energy use

with clean power, maximizing circular opportunities to reduce resource consumption and waste, de-carbonizing transport of goods and services, and investing in nature to increase the carbon sequestration of forests, land and oceans.

While limiting global warming to 1.5°C is possible, economies and societies worldwide must undergo rapid and far reaching transformation at unprecedented speed and scale.

Natural climate solutions are an established means of reducing, capturing and storing carbon emissions. Using them provides opportunities for both climate change mitigation and increased resilience.

Investing in nature offers a significant opportunity to sequester atmospheric carbon at a global scale while delivering solutions for biodiversity and ecosystems. GHG emissions agriculture, forestry, and other land uses (AFOLU) contribute a quarter of total global GHG emissions. Investments in nature could potentially deliver one third of the emissions reductions needed to align with the Paris Agreement between now and 2030.

Stopping deforestation, improving soil health, protecting natural carbon sinks, restoring damaged habitats, and implementing climate-smart agriculture practices are solutions that can and must be scaled today. However, despite their massive potential, most estimates suggest Natural Climate Solutions only attract 2 to 3 % of public climate finance globally. Natural Climate Solutions are not just for land sector companies. They can offset hard-to-abate and unavoidable emissions, supporting the transition to sustainable land use at the same time as accelerating near-term progress towards net-zero emissions across all business sectors. At the same time, they create the opportunity to invest also in biodiversity, just livelihoods and rural transitions, and food security.

Delivering these solutions at scale will require unprecedented funding and coordination. Close collaboration between governments, businesses, investors and civil society will be needed.

The private sector can play a critical role in accelerating and financing these solutions. Together, we are stepping up to the challenge.



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② Natural climate solutions: the opportunity for business



Executive summary

Natural climate solutions (NCS) help nature do what it's been doing for millions of years: sequester and store carbon.

Research shows that these solutions could deliver up to one third of the emissions reductions between now and 2030 needed to limit global warming to 2°C.¹ A third of these have a price of USD \$10 per tCO₂e – or less.² NCS can also protect ecosystems, contribute to climate resilience, restore land and transform agricultural, wetland and forestry practices.

However, despite their massive potential, most estimates suggest NCS only attracts 2 to 3 % of public climate finance globally.

WBCSD has formed a partnership with a coalition of NGOs, Nature4Climate,³ to help unlock private capital for investments in NCS.

As part of this, WBCSD will focus on raising corporate, civil society and consumer awareness and accelerating voluntary action, while working in partnership with other key organizations to promote and scale carbon pricing policies that steer private capital to NCS.

Collectively, global targets are not on track to meet the goals of the Paris Agreement. In fact, current targets point to 3 °C of warming by 2100. The impacts of such warming would cause significant and material risk to business and society.

As such, the Intergovernmental Panel on Climate Change (IPCC) is calling for urgent action. The speed at which we can avoid further greenhouse gas emissions, transition to renewable energy and push for energy efficiency will still not be enough to meet our targets.

NCS can help.

NCS are an important complement to long-term corporate decarbonization strategies. This is especially true across land sector companies, where reductions in GHG emissions from agriculture, forestry and other land uses (AFOLU) – which contribute a quarter of total global anthropogenic GHG emissions – could make a significant impact on achieving climate goals. For companies working in sectors like agriculture and forestry, investing in nature offers a significant opportunity to sequester atmospheric carbon at a global scale – helping develop sustainable practices in addition to existing efforts to avoid and reduce emissions.

However, NCS are not just for land sector companies. NCS can offset hard-to-abate and unavoidable emissions, supporting the transition to sustainable land use at the same time as accelerating near-term progress towards net-zero emissions across all business sectors.



There are two important drivers for investment in NCS, namely purchasing carbon credits for voluntary action and regulatory compliance:

Voluntary action: Many companies are voluntarily responding to the obvious business case for addressing climate change. In 2016, voluntary buyers paid USD \$191.3 million to offset 63.4 million metric tons of CO₂ (MtCO₂e)⁴ - this is equivalent to a year's worth of GHG emissions from 13.4 million cars,⁵ roughly the number of cars on the road in Belgium and the Netherlands combined.⁶

Forestry and land-use carbon credits made up 13.1 million metric tons (MtCO₂e) at USD \$67 million.⁷ Given the size of the challenge to achieve the Paris Agreement, voluntary action is critical for demonstrating and scaling NCS markets.

Regulatory compliance: Carbon pricing instruments like carbon taxes and trading schemes provide incentives to reduce emissions.

Since 2012, the number of implemented or scheduled carbon pricing policies has nearly doubled and a growing minority already encourage NCS carbon credits. The combined value of the world's carbon pricing initiatives, including both taxes and emissions trading schemes (ETS), totaled USD \$82 billion in 2018.⁸ While the voluntary use of natural climate solutions is growing and desirable, it is not currently sufficient to deliver the Paris Agreement's goals. Given the scale of the climate challenge, regulatory carbon pricing instruments – which are typically measured in billions of dollars rather than millions – would likely have a much greater impact than voluntary action.

Whether companies are driven by regulation or taking voluntary action, they must make sure that their approach to the use of carbon credits and the credits themselves are robust and scientifically sound.



WBCSD and Nature4Climate members recommend that any NCS investment adheres to the following four guiding principles:

1. NCS investments can and should **raise ambition** with respect to climate action, enhancing rather than diluting a company's contribution to the Paris goals. Carbon credits should therefore be used in conjunction with the GHG emissions **mitigation hierarchy**.
2. NCS credits can provide an **interim solution** for hard-to-abate emissions, but not a permanent one. For unavoidable emissions, carbon sinks - potentially including natural sinks - will always be needed to achieve net zero. NCS credits should be considered an **enabling solution** that will support long-term sustainable land use.
3. NCS investments should deliver **environmental and social safeguards and benefits** in addition to GHG emissions reductions.
4. **Sound and verified carbon measurement and accounting methodologies** should be applied to ensure **high environmental integrity of NCS credits**.

The remainder of this paper dives into several of the key elements of the NCS landscape today, as well as into each of the four principles. This paper is designed to provide reference and support to companies interested in integrating NCS into their GHG emissions mitigation strategies.

③ The climate challenge, the role of the land sector and negative emissions technologies



③ The climate challenge and the role of the land sector and negative emissions technologies

At COP 21 in Paris, nearly 200 countries adopted the landmark Paris Agreement to combat climate change. The Agreement aims to keep the global temperature rise to well-below 2°C above pre-industrial levels, pursuing efforts to limit warming to 1.5°C.

While the Paris Agreement charted a new, more ambitious course in the global effort to stop climate change, three years on, the world is not on track to meet the original goals, in particular to limit warming to 1.5°C, which the IPCC describes as the upper limit of a safe operating space for humanity.⁹

An IPCC report published in October 2018, highlights that worldwide, on average, we've already reached 1°C warming and today's rates of decarbonization are less than half of what's needed to limit warming to safer levels. In fact, global warming is expected to exceed 1.5°C as early as 2040.

Given this challenge, the IPCC describes the use of "carbon removal" technologies to capture greenhouse gases from the atmosphere and securely store them.

The IPCC lays out potential options for carbon removal technology such as Direct Air Carbon Capture and storage (DACCS) or Bio Energy with

Carbon Capture and Storage (BECCS). Although these solutions are important, they have not in general been proven commercially or widely deployed at scale and therefore these technologies need more time. In contrast, NCS are available for deployment at scale today.

Use of NCS is not only about negative emissions technologies, however. Reductions in GHG emissions from agriculture, forestry, and other land uses (AFOLU) - which contribute a quarter of total global GHG emissions¹⁰ - are also needed. Using NCS to avoid emissions from the land sector in addition to creating carbon sinks can make a significant impact on achieving climate goals.

In this light, investing in nature as a proven solution offers a compelling option for society and business.

NATURAL CLIMATE SOLUTIONS CAN HELP BRING THE PARIS AGREEMENT INTO REACH

Pursuing a pathway for rapid GHG emissions reductions is essential over the next decade,¹¹ which is critical – and NCS can be a key part of this. If sufficient action is not pursued today using all the available cost effective technologies we have at our disposal, then we will likely be left turning to solutions that are more expensive, and in some cases unproven, to give us any chance

of avoiding catastrophic climate change at a later stage.

Nature is a proven, scalable carbon removal technology that's been refined endlessly over millennia. Businesses, governments and other actors can implement NCS across the globe at massive scale to reduce atmospheric CO₂ emissions.

NCS store carbon and other greenhouse gases by enhancing, restoring or protecting natural sinks – like wetlands and peatlands - or by reducing emissions from land-use change. NCS are usually pursued through three main activities: conservation, restoration and improved land management across forests, grasslands, agricultural lands and wetlands (see Figure 1 for examples).

Recent research shows that NCS can provide up to one third (11.3 billion tons CO₂e at less than USD \$100 per tCO₂e) of the GHG emissions reductions needed by 2030.¹² The same study showed that a high proportion of this is available at relatively low cost; around 3 GtCO₂e can be delivered annually for less than USD \$10 per tCO₂e (see Figure 2).

Figure 1: Examples of NCS



CONSERVATION

Rising demand for food and natural resources is causing large-scale land conversion around the world for commercial agriculture and urban development.

This land conversion releases carbon that had previously been stored.

By protecting habitats from unnecessary or irresponsible conversion, the loss of carbon stored in plants and soils into the atmosphere is avoided.

This maintains the land area as an active carbon sink.



RESTORING COASTAL WETLANDS

Coastal wetlands such as saltmarshes, seagrass meadows and mangrove forests store and sequester carbon.

These “blue carbon” ecosystems can store up to four times more carbon per hectare than terrestrial forests.

However, destruction of coastal ecosystems is releasing massive amounts of carbon.

Restoring these environments can prevent carbon from escaping while enhancing community resilience against the localized impacts of climate change through storm and flooding protection, for example.



SMART AGRICULTURE AND LAND MANAGEMENT

Tropical and temperate forests are highly effective carbon sinks. Improved agricultural practices can deliver improved carbon storage in healthier soils.

Climate smart agricultural practices and proper management of working plantations and forests can aid carbon storage while improving yields and productivity of the land.

Improving soil health and forest management improves the resilience of farming and forest communities to climate change risks of both drought and flooding, for example.

THE ROLE OF BUSINESS IN DELIVERING AND SCALING NATURAL CLIMATE SOLUTIONS

Deploying NCS at scale will require everyone to play their part. Governments can provide enabling conditions through policy change while civil society can promote new ideas and hold organizations accountable for their actions. Business will also be critical in unlocking the massive potential of NCS.

All companies can make use of insetting¹³ or offsetting using NCS credits to compensate for emissions that cannot be avoided through their mitigation strategies, helping draw down or avoid carbon emissions in order to achieve net-zero emissions in the second half of the century.

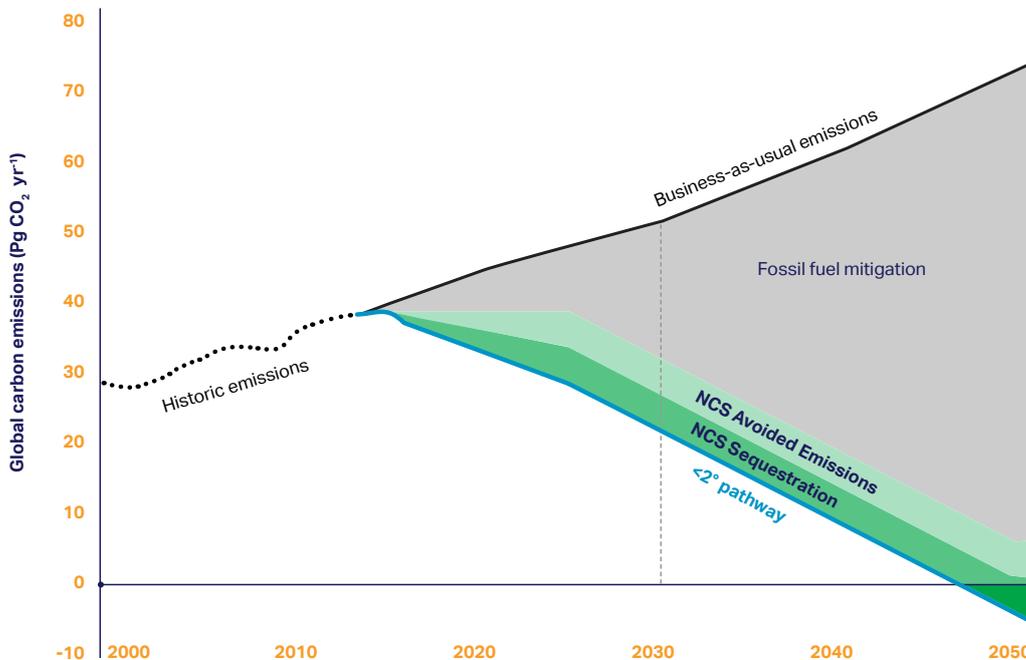
NCS carbon credits should be used as a tool to help companies to demonstrate leadership, and to make additional, near-term contributions towards their climate goals.

For this to work, investment in NCS for offsetting **must** occur **in tandem** with strong emissions reductions efforts in the companies' own operations, whether companies are operating in the agrifood, chemicals, energy, materials, transportation or any other sectors.

In the second half of the century, absolute emissions reductions globally must be significant enough to maintain steady atmospheric CO₂ levels and we should not need to over-rely on offsetting. In other words, for most companies, investment in NCS should only be used to complement wider climate action that delivers net zero global GHG emissions.¹⁴

Figure 2: Chart showing the potential contribution of NCS to limit climate change up to 2030 and beyond

Reproduced from Griscom, B.W. et al., 2017, NCS



Companies operating in the land-use sector are a bit different as they have a particularly important long-term role to play: managing land sustainably in order to provide necessary commodities to the global markets while also working to enable and support local communities and indigenous peoples. While companies operating in this space are critical for a healthy and thriving human society, they're also responsible for approximately 25 % of global anthropogenic emissions.¹⁰

Because of this, land-sector companies have two key roles. Firstly, they can implement long-

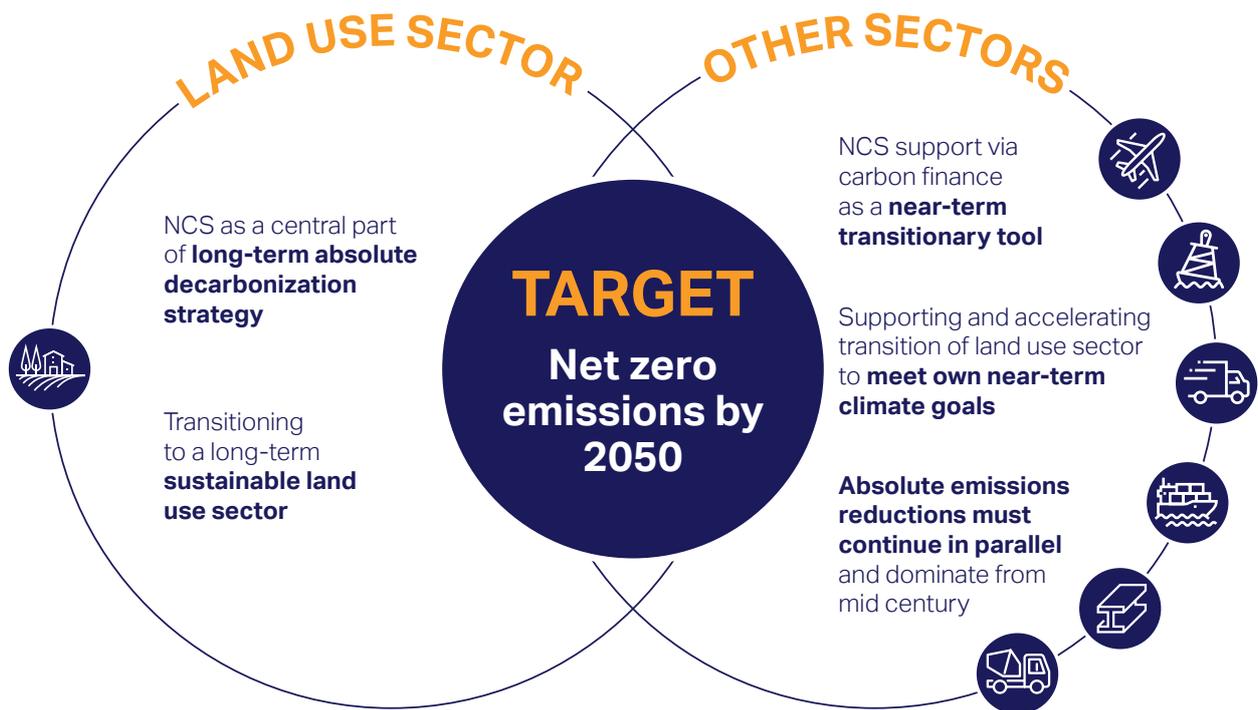
term sustainable agricultural and forestry practices that avoid deforestation while engaging in restoration efforts. Companies in this sector, due to their management and/or ownership of land, also have the opportunity either to sequester CO₂ within their own supply chains - in the form of insetting - or to produce carbon credits for use outside their supply chains.

Nearly 450 consumer goods companies have now set zero-deforestation commitments for the products they source, responding to customer demand and because of long-term productivity benefits.¹⁵

For example, farmers and food producers increasingly invest in improving soil health as part of climate-smart agriculture initiatives, recognizing the significant climate and business benefits of doing so. Improving soil health increases land productivity, while healthy soils are also more effective at storing and sequestering carbon.

Leading companies in the forest sector are also working with customers and policy makers to develop business opportunities for sustainably managed forests, delivering positive ecological and social outcomes by maximizing carbon storage and providing livelihoods for local people.

Figure 3: Different private sector actors can play different and complementary roles in supporting NCS



KEY DRIVERS FOR SCALING INVESTMENT IN NCS

There are two important drivers behind business investment in NCS – both are likely to increase in the coming years.

VOLUNTARY ACTION

Risks associated with climate change are becoming clearer and more tangible – as are the commercial opportunities for addressing them.

In addition, companies face pressure from customers, investors and employees to act on climate change using methods that are anchored in science and aligned to the Paris Agreement.

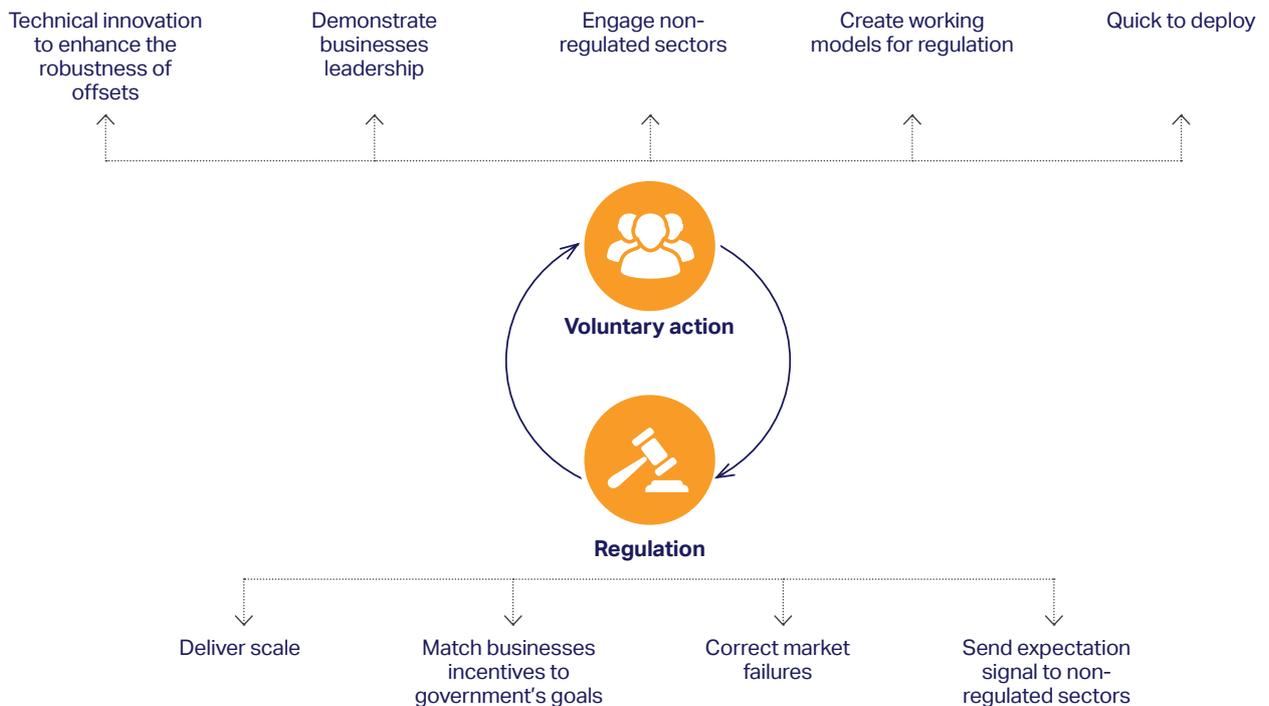
Targets exist for addressing climate change that increasingly cover full value chains, going beyond a company’s own operations, and aim for “carbon neutrality.”

Many companies face challenges in meeting their climate action commitments, particularly in the near-term. This is because silver-bullet solutions do not yet exist, especially in hard-to-decarbonize industries such as steel, aluminum, shipping and aviation. At the same time, implementation of new technologies often happens over long time-horizons, as is evident in the slower-than-desired uptake of electric light passenger vehicles.

Voluntary use of NCS demonstrates to policymakers that businesses are taking action and are comfortable using NCS carbon credits. In doing so, voluntary uptake is likely to give governments the confidence they need to deploy enabling policy frameworks and structures for scaling up NCS investment. It’s worth noting that some sectors may never fall under direct carbon price regulation and therefore scaling voluntary action for these sectors will remain critical.

Figure 4: The ambition loop

Both voluntary action and regulation will be necessary in driving corporate NCS investment to the scale required, with each playing a distinct (but interacting) role



Key benefits for companies using NCS voluntarily include:

- **Low-carbon product offerings:** Customers – including other businesses – are looking to achieve carbon neutrality, and often are concerned about their carbon footprint. NCS can help companies meet this demand. For example, an airline may use NCS to help customers offset their travel emissions.
- **Ensuring stability of supply:** NCS bring several co-benefits in addition to offsetting carbon emissions. These benefits could include increased resilience of agriculture, company assets and supply chains, securing supply of products in the face of growing climate-related risks through for example enhanced flood defenses or improved soil health. When designed appropriately they can also improve biodiversity and ecosystems while helping farmers and rural communities accelerate improved practices and strengthen resilience.

There are, however, several challenges to accelerating the voluntary deployment of NCS including:

- Many reporting frameworks and standards designed to help companies set

emissions reductions targets or disclose their performance on tackling climate change offer **limited or no recognition of NCS offsetting**. This is because there's still a lack of consensus on, or support for, the role of offsetting as a decarbonization tool by NGOs. At the same time, many consumers or investors may not recognize the commercial and social value derived from investing in NCS, which can limit demand.

- **Concern about the robustness of NCS and land sector carbon credits** emerged in the early 1990s when the idea and economic thinking around this work was still nascent. Calculating emissions reductions from the land sector was not well understood – as it was for other offset project types such as those with renewable energy. Concerns from a broad set of stakeholders revolved around whether a land sector offset project would merely displace, rather than reduce, emissions. However, there is now substantial evidence that addresses previous technical challenges using globally agreed guidance¹⁷ in, for example, large-scale forestry projects. There's also a series of more robust tools and methodologies available for ensuring the robustness and integrity of NCS offset projects.¹⁸

- Another issue is the **uncertainty around how carbon units will be embedded within the accounting and governance structure of a country's Nationally Determined Contribution (NDC) under the Paris Agreement**. At the core of this is a lack of clarity as to whether countries will export carbon units to private investors without simultaneously making corresponding adjustments to their own NDC goals – which could lead to “double counting” or overestimating the amount of carbon abated for every transaction.

The rules governing and monitoring these interactions must ensure that no two entities claim the same carbon unit. These rules are still being negotiated. There is a need for these issues to be resolved by the time NDCs start to take effect in 2020.

- For voluntary NCS to work in business, there's also a **need to build the capacity to implement NCS solutions at scale**.

Addressing these challenges must be a priority, if we are to unlock the full potential of voluntary corporate action.

COMPLIANCE MARKETS

Given the size of the Paris Agreement challenge, all investment in NCS is needed and voluntary action is critical for demonstrating and scaling NCS markets. However, while the voluntary use of natural climate solutions is growing and desirable, it is not currently anywhere near enough to deliver the Paris Agreement goals.

Government policies that raise the ambition of national climate goals (including NDCs), while also integrating nature-based carbon credits into compliance pathways could unlock a scale of investment that exceeds what could be achieved through voluntary markets alone.

Compare, for example, the likely size of voluntary markets for NCS carbon credits, typically measured in millions of dollars, versus compliance markets, normally worth billions of dollars.⁸

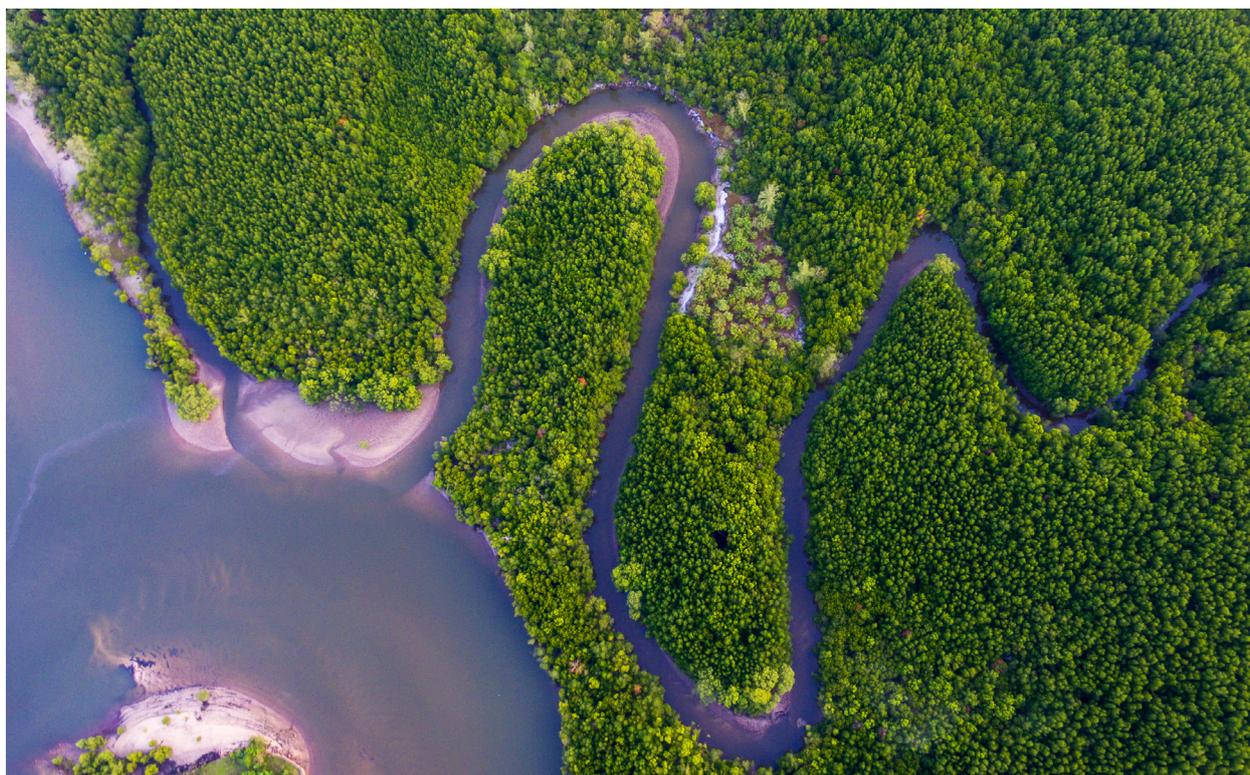
Since 2012, the number of countries who have implemented or scheduled carbon pricing instruments has nearly doubled. As of 2018, 25 emission trading schemes and 26 carbon taxes exist worldwide. The value of these carbon pricing initiatives, including emissions trading schemes, carbon taxes, permits and allowances reached USD \$82 billion in 2018.⁸

Carbon pricing policies that create price disincentives for carbon emissions rarely include complementary price incentives for sustainable land-use; this must be addressed to achieve the full potential of NCS.

In some cases, governments leave NCS out of compliance regimes because of outdated concerns around whether a land sector offset project would merely displace, rather than reduce, emissions – as mentioned above. These perceptions are changing; Australia, California, China, Colombia and New

Zealand now all include NCS in regulatory frameworks and are demonstrating that they work.

CORSIA (the Carbon Offset and Reduction Scheme for International Aviation), is projected to require around 2.5 billion tons of carbon credits from 2020-2035.¹⁹ Under the plan, international aviation's emissions above 2020 levels must be offset with allowable carbon credits. Specifically, airline operators will have to purchase offsets for a portion of their flight routes between countries that are covered. From 2021-2026 only countries that have volunteered are covered which includes nearly all of the major aviation states. From 2027-2035 coverage expands to include every country except LDCs and SIDS who can still volunteer to be included in the plan. The types of offset credits that will be admissible have yet to be decided, so it is unclear whether NCS will be allowed to play a major role in helping the aviation sector lower its climate impact.



PRINCIPLES FOR NCS INVESTMENTS

Whether it is voluntary action by companies or regulatory compliance, there must be assurance that the approach taken to offsetting is credible and rooted in science and that the NCS carbon credits are produced sustainably and deliver real carbon emissions reductions.

All actors – companies, governments and civil society – will therefore need to adopt a set of principles that can deliver this environmental and social integrity.

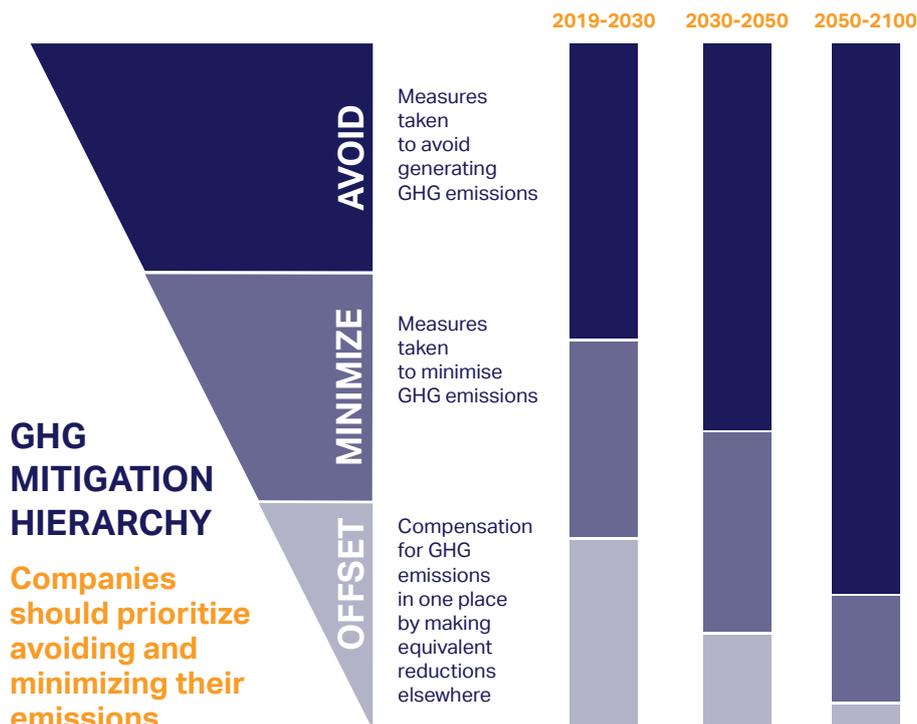
WBCSD and Nature4Climate strongly recommend that any NCS investment adhere to the following four principles:

1. NCS investments can and should **raise ambition** with respect to climate action, enhancing rather than diluting a nation's or a company's contribution to the Paris goals. Carbon credits should therefore be used in conjunction with the GHG emissions **mitigation hierarchy (See Figure 5)**.

Avoiding, minimizing, and reducing emissions should be prioritized. These efforts should continue in parallel with and in addition to the use of NCS credits.
2. NCS investments must deliver an **interim solution** for hard to abate emissions, but not a permanent one. For unavoidable emissions, carbon sinks - potentially including natural sinks - will always be needed to achieve net zero. NCS credits should be considered an **enabling solution** that will support long-term sustainable land use.
3. NCS investments must deliver **environmental and social safeguards and benefits** in addition to GHG emissions reductions. For example, the preservation of a given forest could enhance a wide variety of ecosystem services to the benefit of local and indigenous communities' livelihoods.
4. **Sound and verified carbon measurement and accounting methodologies should be applied to ensure high environmental integrity of NCS credits.** Emissions reductions and removals must be real, quantifiable and verifiable, and tracked to avoid double counting.

Figure 5: The mitigation hierarchy

Companies should use NCS offsets in conjunction with the mitigation hierarchy as one component of a decarbonization strategy



UNLOCKING IMPACT AT SCALE: HOW CAN YOUR BUSINESS PLAY ITS PART?

NCS needs to become a major pillar of the global climate change mitigation strategy as soon as possible. Businesses can help unlock the potential of NCS by investing in high quality programs today.

By sending a strong demand signal, your company and sector can help show governments that the private sector is ready and willing to contribute, giving governments the confidence to enact clear policy incentives to which the market can respond.

WBCSD and Nature4Climate³ have formed a partnership to help unlock private capital for investments in NCS. As part of this, through its NCS project, WBCSD will focus on raising corporate, civil society and consumer awareness, accelerating voluntary action, as well as working in partnership with other key organizations to promote and scale carbon pricing policies that steer private capital into NCS.

Our goal is to encourage responsible investment in nature by helping companies overcome challenges to unlocking large scale investment in NCS.

Accelerate private sector investment:

- We'll continue to generate awareness of NCS as a climate solution in order to encourage demand and promote investment in NCS supply. The launch and sharing of this narrative during key events such as the UN Secretary-General's Climate Summit, UNFCCC COP25 and beyond will take a central role in our communications strategy.
- By recognizing the role that NCS can play in driving down emissions, globally accepted frameworks for GHG accounting and target-setting frameworks such as the GHG Protocol and Science Based Targets can act as strong enablers that encourage business to integrate NCS into their climate strategies. To achieve this, we will engage with and on behalf of our members to ensure their voice is heard in the debate and to find solutions that can work within and/or alongside such frameworks.
- The credibility concerns around the quality and robustness of NCS carbon credits still need to be addressed to achieve greater acceptance by business and society. The science behind carbon sequestration by nature is well established. Equally, standards agencies can and do provide independent verification of NCS projects. Collating and communicating the latest information on NCS offsetting can help to alleviate credibility concerns.

Advocate for policy:

- Governments and regulators should ensure that policy supports the use of sustainable NCS. In particular, the incorporation of NCS carbon credits in compliance markets will help drive these solutions to the scale needed. To achieve a policy environment that releases the potential of NCS, the unified voice of business should be articulated and heard at the highest levels. WBCSD, in collaboration with key partners, aims to provide a platform for this discussion at key UN events and through continued engagement with governments in partnership with organizations such as N4C and the World Economic Forum (WEF). Central to these efforts will be the NCS Alliance which will be launched at the 2019 New York Climate Week.
- WBCSD and partner organizations will continue to advocate for the development of credible accounting and governance structures that allow the international transfer of mitigation outcomes between countries. This is best achieved through Article 6 of the Paris Agreement.

WBCSD and N4C aim to stimulate private sector ambition and investment in NCS to protect nature and improve food security while sequestering carbon from the atmosphere on a scale sufficient to combat climate change. The NCS team at WBCSD welcomes participation and partnerships – so please reach out to WBCSD and help us shape these exciting - but as yet underdeveloped - natural climate solutions.

Endnotes

- ¹ Griscom et al., Natural climate solutions, PNAS 2017 114 (44) 11645-11650, <https://www.pnas.org/content/114/44/11645>
- ² For reference, at the beginning of 2019, carbon traded on the European Union Emissions Trading System (EU ETS) at around \$10 per tCO₂e. <https://www.eex.com/en/market-data/environmental-markets/spot-market/european-emission-allowances#!/2019/01/02>, <https://www.statista.com/statistics/412794/euro-to-u-s-dollar-annual-average-exchange-rate/>
- ³ Including UNDP, CBD, The Nature Conservancy, Conservation International, World Resources Institute, Wildlife Conservation Society, Woods Hole Research Centre and WWF.
- ⁴ State of Forest Carbon Finance 2017 https://www.forest-trends.org/wp-content/uploads/2018/01/doc_5715.pdf
- ⁵ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>
- ⁶ ACEA Report Vehicles in use Europe 2017, https://www.acea.be/uploads/statistic_documents/ACEA_Report_Vehicles_in_use-Europe_2017.pdf
- ⁷ Negative Emissions Technologies and Reliable Sequestration: A Research Agenda (2019). National Academies of Sciences, Engineering and Medicine, <https://www.nap.edu/read/25259/>
- ⁸ State and Trends of Carbon Pricing 2018, <https://openknowledge.worldbank.org/bitstream/https://www.ipcc.ch/sr15/>
- ⁹ <https://www.ipcc.ch/sr15/>
- ¹⁰ Agriculture, Forestry and Other Land Use (AFOLU). In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change
- ¹¹ The IPCC highlights that the next twelve years are critical to achieving the emissions reductions needed to avoid catastrophic climate change impacts.
- ¹² The Natural Climate Solutions (NCS) referred to in this paper are land- and coastal-based and do not include the potential role of oceans.
- ¹³ <http://www.insettingplatform.com/index.php>, <https://www.icroa.org/Insetting>
- ¹⁴ A 2016 study found that companies that offset overwhelmingly do so in the context of an overarching emissions reduction strategy, investing approximately 10 times the amount in direct emissions reductions compared to companies that don't offset. <https://www.forest-trends.org/publications/buying-in/>
- ¹⁵ <https://news.mongabay.com/2018/02/zero-deforestation-pledges-need-help-support-to-meet-targets-new-study-finds/>
- ¹⁶ <https://sciencebasedtargets.org/>
- ¹⁷ Donofrio, B., Rothrock, P. & Leonard, J. Supply-change: Tracking Corporate Commitments to Deforestation-free Supply Chains (Forest Trends, 2017).
- ¹⁸ Examples include: <https://verra.org/>, <https://www.goldstandard.org/>
- ¹⁹ <https://www.iata.org/policy/environment/Pages/corsia.aspx>

ABOUT WBCSD

WBCSD is a global, CEO-led organization of over 200 leading businesses working together to accelerate the transition to a sustainable world. We help make our member companies more successful and sustainable by focusing on the maximum positive impact for shareholders, the environment and societies. Our member companies come from all business sectors and all major economies, representing a combined revenue of more than USD \$8.5 trillion and 19 million employees. Our Global Network of almost 70 national business councils gives our members unparalleled reach across the globe. WBCSD is uniquely positioned to work with member companies along and across value chains to deliver impactful business solutions to the most challenging sustainability issues. Together, we are the leading voice of business for sustainability: united by our vision of a world where more than nine billion people are all living well and within the boundaries of our planet, by 2050.

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ABOUT NATURE4CLIMATE

Nature4Climate (N4C) is an initiative of the United Nations Development Programme (UNDP), UN-REDD, the Convention on Biological Diversity (CBD), the International Union for Conservation of Nature (IUCN), Conservation International (CI), The Nature Conservancy (TNC), Wildlife Conservation Society (WCS), Woods Hole Research Center, World Business Council for Sustainable Development (WBCSD), World Resources Institute (WRI), We Mean Business (WMB) and WWF that aims to increase investment and action on natural climate solutions in support of the 2015 Paris climate agreement. The N4C partners work together to catalyze partnerships between governments, civil society, business and investors that use nature-based solutions to climate change.

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