Overarching forest goals

Sustainable production & development

Finance for forests

Forest governance

# Forest Declaration Assessment

## Are we on track for 2030?

October 2022

Forest Declaration Assessment

www.forestdeclaration.org

## ABOUT

The Forest Declaration Assessment is a continual and collaborative process achieved collectively by civil society organizations and researchers, known as the Forest Declaration Assessment Partners. Previously the NYDF Progress Assessment, the Forest Declaration Assessment has since 2015 published annual updates on progress toward global forest goals. All assessment findings undergo a rigorous peer review process conducted by experts across the globe. To learn more about the Forest Declaration Assessment, please visit www.forestdeclaration.org/about/assessment.



## CITATION

Please use the following citation when referencing the findings presented in this brief:

> Forest Declaration Assessment Partners. (2022). Forest Declaration Assessment: Are we on track for 2030? Climate Focus (coordinator and editor). Accessible at www.forestdeclaration.org.

## ACKNOWLEDGMENTS

This project is supported by the Climate and Land Use Alliance (CLUA) and the Forest Declaration Platform. Support with media relations was provided by Burness. Digital communications coordinated by Sara Cottle. Translations provided by VVH business translations. The authors are grateful to the numerous individuals and organizations who provided their time and expertise, in many different ways, to the development and improvement of this work


# Forest Declaration Assessment

## Are we on track for 2030?

## Executive Summary

**October 2022**

The Forest Declaration Assessment (formerly the New York Declaration on Forests (NYDF) Progress Assessment) is an independent, civil society-led initiative to assess progress toward the global goals of halting deforestation and restoring 350 million hectares of degraded land by 2030 as set out in international declarations such as the New York Declaration on Forests (2014) and the Glasgow Leaders' Declaration on Forests and Land Use (2021). Globally, terrestrial and coastal ecosystems including savannas, grasslands, scrublands, and wetlands are all under threat of conversion and degradation. Countering this threat for all ecosystems is essential to meeting global climate and biodiversity goals. This annual assessment of global progress for 2022, however, focuses specifically on forest ecosystems. It is published as a set of four reports covering different themes: Overarching forest goals, Sustainable production and development, Finance for forests, and Forest governance.

Global conservation goals include limiting global temperature rise to 1.5°C, as articulated in the Paris Agreement and reducing the loss of biodiversity per the Convention on Biological Diversity's Aichi targets. Achieving these results will require a drastic reduction in the conversion and degradation of all natural ecosystems and a very large increase in restoration and reforestation activities, which must be pursued through equitable and inclusive measures. This assessment focuses on forests as a prominent subset of these ecosystems. Nothing less than a radical transformation of development pathways, finance flows, and governance effectiveness and enforcement will be required to shift the world's forest trajectory to attain the 2030 goals. The 2022 Forest Declaration Assessment evaluates recent progress toward the 2030 goals and answers the question: ***"Are we on track?"***

# Progress toward 2030 forest goals

Forests are fundamental to regulating and stabilizing the global climate. Meeting the Paris Agreement's ambition of limiting global warming to no more than 1.5°C will require global greenhouse gas (GHG) emissions to reach net-zero by the second half of this century. Eliminating deforestation by 2030 is a major milestone towards achieving the 2050 net zero target. Land use change, including deforestation and degradation, accounts for 10-12 percent of global GHG emissions.[a] Protecting forests also comes with clear benefits for people, biodiversity, and sustainable development.[b]

**THEME 1:**

**OVERARCHING FOREST GOALS**

The overarching forest goals of: 1) ending the loss and degradation of natural forests by 2030, and 2) restoring 350 million hectares of degraded landscapes and forestlands by 2030 are the guide stars against which all deforestation, forest degradation, and restoration efforts will be measured over the coming decade. This assessment builds on previous New York Declaration on Forests Goal 1 and Goal 5 progress reports, providing updates using the latest available data.

Halting deforestation and forest degradation as soon as possible, and no later than 2030, will substantially reduce the release of terrestrial GHG emissions to the atmosphere. Restoring forests and other ecosystems will also return significant amounts of carbon to stored biomass and help us realize our collective 2030 targets.

Only eight years remain to achieve the twin global goals of halting and reversing deforestation by 2030. Despite encouraging signs, not a single global indicator is on track to meet these 2030 goals of of stopping forest loss and degradation and restoring 350 million hectares of forest landscape.

To be on course to halt deforestation completely by 2030, a 10 percent annual reduction is needed. However, deforestation rates around the world declined only modestly, in 2021, by 6.3 percent compared to the 2018-20 baseline. In the humid tropics, loss of irreplaceable primary forest decreased by only 3.1 percent. Globally, forests became more degraded in 2021, but more slowly than during the 2018-20 baseline period; if continued, this slowdown may in time put the world on track to meet the 2030 target. There is also a significant year-to-year fluctuation in both deforestation and degradation metrics, which makes it difficult to detect trends over short periods of time. Future Assessments will continue to monitor these processes to confirm the limited progress detected in 2021.

Tropical Asia is the only region currently on track to halt deforestation by 2030 (**Figure ES1**). While deforestation rates in Tropical Latin America and Africa decreased in 2021 relative to the 2018-20 baseline, those reductions are still insufficient to meet the 2030 goal. Each year that passes without sufficient

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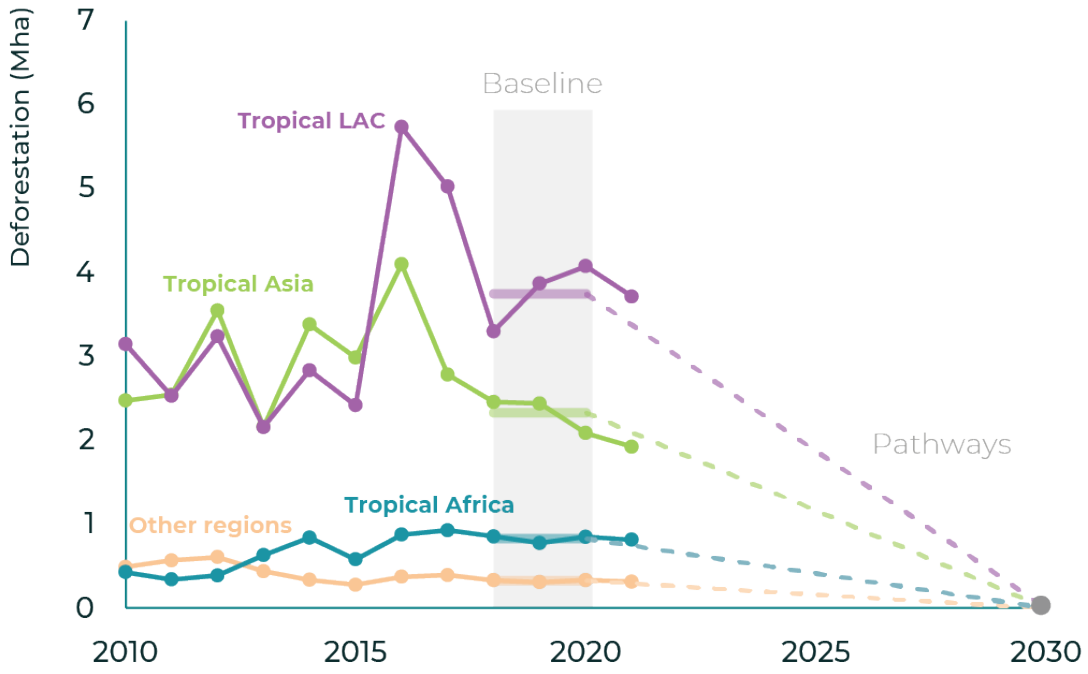
[a] IPCC. (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. https://www.ipcc.ch/report/ar5/syr/; IPCC. (2019). *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. https://www.ipcc.ch/srccl/.

[b] Chao, S. (2012). Forest Peoples: Numbers across the world. https://www.forestpeoples.org/sites/fpp/files/publication/2012/05/forest-peoples-numbers-across-world-final_0.pdf; World Resources Institute & Climate Focus. (2022). Sink or swim: How Indigenous and community lands can make or break nationally determined contributions (p. 22). https://forestdeclaration.org/resources/sink-or-swim; Gibson, L., Lee, T.M., Koh, L.P., Brook, B.W., Gardner, T.A., Barlow, J., Peres, C.A., Bradshaw, C.J., Laurance, W.F., Lovejoy, T.E. & Sodhi, N.S. (2011). Primary forests are irreplaceable for sustaining tropical biodiversity. *Nature, 478(7369),* 378-381. https://doi.org/10.1038/nature10425

progress makes it increasingly difficult to meet global forest protection goals—and increases the annual reductions required in future years.

Notable progress in afforestation and reforestation efforts over the last two decades have resulted in new forest new forest areas the size of Peru, with net gains of forest cover in 36 countries. However, overall losses exceeded gains over the same period, resulting in a net loss of 100 million hectares globally. It should be noted that forest cover gains, through reforestation and afforestation activities, do not compensate for forest loss in terms of carbon storage, biodiversity, or ecosystem services. Therefore, highest priority efforts should be directed towards safeguarding primary forests from losses in the first place.

**Figure ES1. Global deforestation rate by region over the 2010-2021 period, in million hectares, and the pathway to reach the 2030 gross zero target from the 2018-2020 baseline**




Source: Figure based on original analysis for this report using data from Hansen et al. 2013.
Note: The data referring to other regions are used here for reference, to highlight that the bulk of deforestation takes place in only two global regions. The data before and after 2015 are not directly comparable, as the methodology to detect the tree cover loss has been improved and may result in higher estimates of loss for recent years compared to earlier years, although this does not affect the assessment of progress since 2020.

# Sustainable production and development

Global demand for soft commodities like food and timber, and for mined commodities like fossil fuels and mined materials, continues to drive expansion of agriculture, extractive industries, and other land uses into forests. Deforestation is often enabled by the establishment of infrastructure, intentionally or unintentionally opening access to forests. The gravest forest risk comes from so-called megaprojects, which combine multiple types of transportation and energy infrastructure, along with sites of agricultural commodity production, natural resource extraction, and planned urbanization. Such projects are currently underway or planned in all major tropical forest regions.

Forests are under threat not only from global markets, but also from growing demand due to populations in forest areas and urban centers. Billions of people, particularly Indigenous Peoples and local communities (IPs and LCs), rely on forests for their subsistence or pursue small-scale commercial activities that sustain livelihoods. These activities, too, can lead to deforestation or permanent degradation when demand pressure outpaces the rate of regeneration.

THEME 2:

**SUSTAINABLE PRODUCTION AND DEVELOPMENT**

The sustainable production and development assessment explores the economic sectors and activities that contribute to and drive deforestation and forest degradation, including agriculture, extractive industries, infrastructure, and other aspects of economic development. This report builds on previous NYDF Progress Assessment reports on NYDF Goal 2 (agricultural commodities), Goal 3 (extractive industries and infrastructure), and Goal 4 (sustainable livelihoods). This review aligns with corporate targets to end deforestation from agricultural commodity production by 2025, a crucial milestone for limiting temperature rise to below 1.5°C.

## Findings

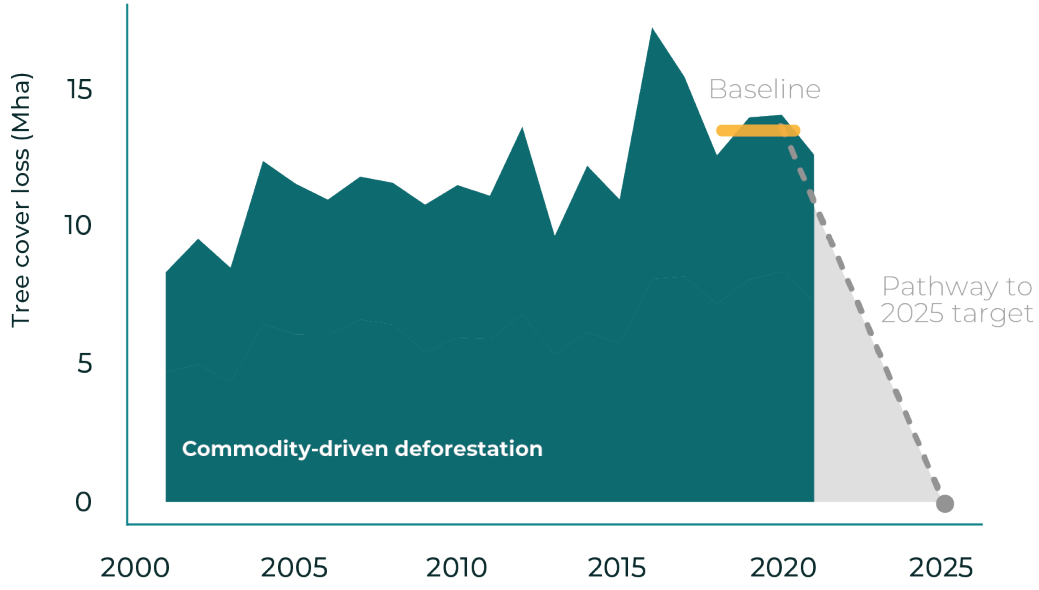
We are not on track to achieve the private sector goal to eliminate deforestation from agricultural supply chains by 2025. Commodity-driven tree cover loss declined by 6 percent in 2021 compared to previous years (2018-20), but deforestation rates are still higher than in any year before 2016 and are far from the trajectory (20% reduction per year) needed to reach the 2025 target (**Figure ES2**).

Almost all national governments have adopted ambitious forest goals under the Sustainable Development Agenda 2030 indicating broad alignment with the aim of achieving sustainable production and development. Dozens of developing countries have forest strategies in the context of REDD+ (reducing emissions from deforestation and forest degradation), laying the groundwork for important reforms—and, in some cases, driving important policy changes. In most cases, however, these programs have not yet yielded a reduction in deforestation, and only a handful of countries have received payments for forest emission reductions.

In most countries, governments have yet to make the bold sectoral reforms needed to protect forests. There is limited transparency on how policymakers integrate forest goals into their decision-making, and how they seek to avoid and mitigate forest risks across economic sectors. Land use policies – such as

fiscal incentives, environmental and social impact assessments, and protected area regulations – often fail to integrate forest concerns, have loopholes in their design, or are weakly enforced. Even governments that have adopted "green growth" agendas still struggle to invest in economic growth that is aligned with forest goals.

**Figure ES2. Commodity driven deforestation, in million hectares, and the pathway toward 2025**




Source: GFW, Hansen et al. 2013, and Curtis et al. 2018, and Climate Focus projection of the pathway from 2021 to 2025 based on a target of zero gross deforestation from commodity production by 2025
Note: Commodity driven deforestation includes conversion to non-forest use primarily for commercial agriculture, but also mining or energy infrastructure.

Encouragingly, development interventions such as community forestry, payments for environmental services schemes, and extension services for farmers can address both poverty reduction and deforestation and forest degradation. However, there are very few examples of government-led poverty reduction programs that both prioritize forest impacts and are implemented at scale. An analysis of 23 countries found that most have community or collective forestry schemes in place, but only a few provide robust land tenure or promote economic development.

Similarly, the agriculture sector has not made sufficient progress in reducing deforestation from agricultural commodity production. Since the first NYDF Progress Assessment report in 2016, we have seen little progress removing deforestation from supply chains (NYDF Goal 2), and the transformative potential of voluntary company action has not yet been realized. To date, only a quarter of major global companies in the sector have announced a clear, comprehensive, and ambitious policy to eliminate deforestation from their supply chains; of those, only a few have made significant progress on implementation. Less than 20 percent of companies disclosing to CDP report near complete compliance with their zero deforestation commitments.

Corporate action in the extractives sector also remains limited. In response to investor demand, most mining companies have now adopted some form of corporate social responsibility or environmental, social, and governance approach, but these frameworks rarely include an explicit focus on forests. The pace of implementing responsible mining practices" by leading companies has slowed since 2020 compared to the proceeding years. Few companies have adopted voluntary mining sector sustainability

standards that require them to address direct, indirect, and cumulative forest impacts. The mining sector recently made positive strides by adopting policies and standards that address biodiversity impacts, but overall transparency and actions to address forest impacts still lag significantly behind the agriculture sector.

IPs and LCs stand at the forefront of grassroots environmentalism despite significant risks. IPs and LCs often work together with civil society organizations, smallholder farmer coalitions, and women's networks to combat threats to forests from development projects, extractives, or agricultural expansion. These actors employ various forms of social resistance, but with limited success – only 1 in 10 bottom-up mobilizations against environmentally destructive and socially conflictive projects are successful in stopping their target project. These successes come at a cost: 200 land and environmental defenders were killed in 2021, and the mining and extractives sector is consistently ranked as one of the deadliest for defenders.

## Recommendations

To ensure that 2025 and 2030 do not pass as 2020 did – with limited progress toward global forest goals – governments, companies, and civil society must collaborate to accelerate forest action, supported by transparency and accountability.

The Forest Declaration Assessment Partners urge the endorsers of the Glasgow Leaders' Declaration, as well as other pledgers, to ensure full transparency on the implementation of pledges, so that progress can be tracked and pledgers held accountable. Pledgers must all set clear interim milestones and provide publicly accessible reporting.

Public, private, and grassroots actors must prioritize collaboration to leverage relative roles and strengths to meet the 2025 target for commodity-driven deforestation. Where certain geographies and supply chains have achieved reductions, the credit can usually be shared between government mandates, company action, and civil society and grassroots initiatives. All actors should accelerate implementation of multifunctional landscape and jurisdictional programs that take an integrative, inclusive, and collaborative approach to addressing forest risks and impacts while driving sustainable economic growth.

Governments must carefully consider whether voluntary action is a viable foundation to achieve the 2030 forest goals, and how the role of mandatory action, disclosure, and accountability should be increased. Despite the exceptional success of a few privately led initiatives—notably the Amazon Soy Moratorium, which has led to lasting and substantial deforestation reductions—voluntary actions alone have not sufficiently shifted the trajectory of forest loss.

- To meet their own voluntary pledges and targets, governments should adopt and enforce stronger mandates for forest protection and sustainable management. Interventions could include binding due diligence regulations and mandatory disclosure, moratoria, increased regulation of protected areas, and recognition and respect for Indigenous territories including mandatory Free, Prior and Informed Consent (FPIC). These mandates should be robust and science-based, covering all forest-risk commodities, legal and illegal deforestation, and addressing human rights and IPs and LCs' rights.

- The critical role of global commodity trading companies, which source and trade a disproportionate volume of forest-risk commodities, must be recognized and leveraged to achieve concrete progress at scale. Governments should implement regulations and legislation targeting these actors, complemented by clear conditions for and from financial institutions.
- Governments should apply a forest lens to interventions designed to increase prosperity and reduce poverty; "greening" poverty interventions can increase their effectiveness by maintaining and improving the contribution of forest ecosystem services to rural livelihoods.
- Across the extractive, infrastructure, and agricultural sectors, regulations should mandate that forest risks identified for any development project must be managed by applying the mitigation hierarchy, with the first step – avoidance – applied as much as possible, accounting for other priorities for sustainable development. Governments should also enforce strict "no-go" zones for extractive industries and infrastructure in high-value forest ecosystems.
- For extractive industries, governments should also strengthen the regulatory processes for prospecting, exploration, and licensing mining activities. Environmental and social impact assessments should be required to be conducted early in the mining life cycle and to assess indirect and cumulative project impacts.
- Across all sectors, governments must empower civil society, smallholders, and, in particular, IPs and LCs, who have traditionally been the strongest constituencies for forests. Governments need to ensure meaningful participation in decision-making, design, and implementation processes by affected rights-holders, including ensuring the right to FPIC. Affected rights-holders include those whose customary forest lands and livelihoods are affected and organizations who advocate for the rights of nature.

Companies need to urgently increase the scope and stringency of corporate action, whether voluntary or mandated. Companies who wish to lead the charge toward the 2025 and 2030 forest goals should advocate at local, national, and international levels for holistic approaches to addressing deforestation; approaches where corporate action is enabled and supported by appropriate legislative and policy frameworks, trade standards, and financial instruments and incentive structures.

- Agricultural companies should strive to follow the best available guidance for removing deforestation from their supply chains and should adopt best practices set by sustainability standards.
- Sectoral bodies like trade and commodity associations should expand their efforts to include domestic markets and small- and medium enterprises into the zero-deforestation and zero-conversion supply chain movement to reach a critical share of market coverage for all forest-risk commodities.
- Extractive companies, and those sourcing from them, should adopt biodiversity commitments and policies that explicitly state that forest impacts from company operations at and beyond the mine site, and company-wide, must be addressed using the mitigation hierarchy. They must then embed the necessary processes and mechanisms in their standard operations to realize these commitments, including monitoring and reporting systems.

- Mining sector sustainability schemes should require site operators and downstream purchasers to assess and manage not just the direct forest impacts of extraction, but the indirect and cumulative as well.
- Companies in the extractives supply chain should also consider the opportunities of conducting forest conservation and restoration activities, through a nature-based solutions lens, to mitigate business risks, achieve company climate and biodiversity targets, and provide benefits to affected stakeholders.

# Forest finance

Achieving international forest goals requires substantial public and private investments to address the drivers of deforestation, and to manage and restore forests sustainably. Improving the environmental impact of our industrial and agricultural systems requires profound changes to economic and legal systems. Without both enforcement and compensation mechanisms, forests will continue to be worth more to users cleared than standing – especially in the short term.

Reaching forest goals requires more finance to be earmarked for forest activities, and existing finance to be shifted away from harmful activities towards sustainable actions.

THEME 3

**FOREST FINANCE**

The assessment of forest finance and forest goals provides updates on available data and recent policies to channel finance to the forest sector, and an assessment of the role of public and private finance, and carbon markets for forest finance. It assesses how progress in the past year has advanced the 2030 global forest goals; the extent to which current finance is sufficient for meeting these goals, and where gaps remain. It also explores new forest finance-related areas, including public sector governance mechanisms, direct finance mechanisms for IPs and LCs, the role of the voluntary carbon market.

## Findings

Finance for forests is not on track to meet global goals to halt and reverse deforestation by 2030. It will cost up to USD 460 billion per year to protect, restore, and enhance forests on a global scale. Currently, domestic and international mitigation finance for forests averages USD 2.3 billion per year – less than 1 percent of the necessary total. For comparison, total finance for climate, from both public and private sources, reached USD 632 billion in 2019-20.

Funding for forests will need to increase by up to 200 times to meet 2030 goals. This funding does not need to come just from philanthropic donations or public sector development assistance—a wide range of financial mechanisms can support forest goals if they are properly designed, including domestic budgets and fiscal policies, private investments, blended and de-risked finance, grants or loans, readiness and capacity building support, and results-based payments.

Finance pledges made in 2021 demonstrate a substantial increase in ambition to meet 2030 forest goals. If they are fully delivered, they would quadruple annual finance for forests from 2021-25 to USD 9.5 billion. Yet, funding would still need to increase by up to 50 times to meet investment needs. One year on from these pledges, it is not yet possible to directly assess their progress because most have yet to publicly disclose on their implementation efforts. However, available data does not yet show an increase in funding corresponding to pledges made at COP26 in November 2021.

From 2010-20, governments committed USD 25.3 billion of domestic and international public funding to protect and conserve forests—financing committed with a stated forest objective, or under REDD+ strategies. Flows have increased since 2010, with a significant period of growth between 2016-19. In 2020, however, finance flows fell by almost half, likely due to countries' changing budget priorities in the COVID-19 pandemic. Even at its height, finance aligned with forest goals paled in comparison to

domestic and international "grey" (potentially harmful) finance flows to agriculture and forest sectors). From 2010-20, grey investments by the public sector totaled at least USD 257 billion in domestic finance and USD 13 billion in international finance.

IPs and LCs, who are the most effective stewards and guardians of their forest territories, receive far less funding than their estimated finance needs for securing tenure rights and preserving forest ecosystems. Only 1.4 percent of total public climate finance in 2019-20 was targeted toward IPs and LC's needs, and only 3 percent of the financial need for transformational tenure reform is being met annually.

Private sector actors—companies, financial institutions, and philanthropies—have not yet leveraged their significant power to steer development and commodity production onto a sustainable trajectory in line with forest goals. Most financial institutions still fail to have any deforestation safeguards for their investments. Almost two thirds of the 150 major financial players most exposed to deforestation do not yet have a single deforestation policy covering their forest-risk investments, leaving USD 2.6 trillion in investments in high deforestation-risk commodities without appropriate safeguards.

Demand for nature-based carbon credits in the voluntary carbon market has grown significantly, driven primarily by interest from companies. The volume of carbon credits traded in the voluntary carbon markets grew by 89 percent in 2021, with 45 percent of all credits issued coming from forestry and land use projects. On the other hand, only 10 percent of the carbon credits issued in compliance markets in 2021 came from schemes that allow carbon credit use from forests. The average price of forest carbon credits in 2021 was between USD 4.7 and 15 per ton of $CO_2$, well below the price needed to meet the Paris Agreement's target of limiting global warming to 1.5 °C. Overall, the contribution of carbon market finance is still minor compared to other green finance sources.

## Recommendations

Despite the price tag for protecting and restoring forests on a global scale—up to USD 460 billion per year—this is an investment that we cannot afford not to make. Achieving the 2030 forest goals is essential for ensuring a livable world in line with the Paris Agreement. Governments, financial institutions, companies, and philanthropies must step up to increase and align their spending and investments with forest maintenance and restoration goals.

The Forest Declaration Assessment Partners call on governments, companies, and financial institutions to utilize all tools at hand to substantially increase their investments in forests, while also shifting finance away from harmful activities.

The Assessment Partners urge those who make forest finance commitments—including endorsers of the Glasgow Leaders' Declaration—to collaborate with impacted communities to design their pledges, and to pair these pledges with transparent and timebound interim milestones and public reporting on disbursements, effectiveness of funding, and alignment of finance flows with forest goals. Commitment makers should detail what share of the pledged finance is additional versus preexisting planned funding and should clarify how, when, and where this finance will be spent. Evaluation mechanisms must be put in place to enable donors and communities to assess the impacts of disbursed finance and allow for needed adjustments. Inclusive and transparent processes are essential to understand how pledged finance compares to needs and can help guide and improve the impact of future investments, as well as help hold actors to account on their commitments. The management and governance of finance for

forests must be developed in partnership with local implementing organizations to ensure that disbursed finance achieves its objectives.

All financial actors, including governments, financial institutions, companies, and philanthropies, must make every effort to support the involvement of IPs and LCs in forest and finance decision-making. Public and private actors must facilitate the flow of finance to IPs and LCs to better enable them to carry out forest-protection and conservation activities. Governments, multilateral institutions, and private foundations should prioritize the establishment of new and direct finance mechanisms for these activities and should codesign these mechanisms with IP and LC groups. Increased coordination and cooperation between donors, NGOs, and IPs and LCs can help to build trust and guide the most appropriate interventions. Public and private financiers must also reduce administrative and technical burdens and provide capacity building for IP and LC groups to receive and manage funds directly. Where intermediaries are necessary, organizations trusted by IPs and LCs should be prioritized.

Public sector actors must take concrete and far-reaching steps to implement and expand their finance commitments and align fiscal and financial policies with forest goals, including:

- Incorporate forest risks and impacts into public budgeting frameworks. Governments must assess the potential impact of public financial and fiscal decisions on forests and direct finance toward activities that present the least risk and most benefits to forests. Safeguard measures must be put in place when needed.
- Seize every opportunity to redirect harmful agricultural subsidies and other incentives (domestic and international) that drive deforestation and forest degradation. Governments should work to identify which subsidies lead to adverse forest impacts and, to the maximum extent possible while ensuring just and equitable outcomes, redirect and repurpose these subsidies, either by making financial support conditional upon achieving environmental objectives, or by channeling finance directly into deforestation-free incentive programs.
- Employ blended financing tools to leverage private sector finance for the protection of forests. Implement policies and instruments which can help to de-risk private investments to create an enabling environment for private finance.

Financial institutions and companies across sectors must recognize and act on the inherent business risks presented by deforestation and forest degradation and put in place measures and policies to combat this risk, including:

- Develop a full understanding of the company's or institution's exposure and contribution to climate- and forest-related risks and impacts (in the short, medium, and long term).
- Incorporate processes for assessing climate- and forest-related risks into existing risk management processes. This includes processes for identifying, managing, and mitigating risks.
- Move from voluntary to mandatory disclosure of forest-related risks and progress against pledges to increase transparency and allow investors to reconsider their capital allocation decisions.
- Implement standards and policies that actively promote green investments and lending to forest conservation-oriented land sector businesses.
- Prioritize investments that are aligned with and synergetic with forest goals, applying the mitigation hierarchy to all investment decisions. Limit the volume of private finance flowing to activities that have a detrimental impact on forests.

Where private sector actors choose to invest in nature conservation and restoration, they must ensure that they are supporting high-quality and high-integrity interventions in line with the mitigation hierarchy and science-based targets. This could include market-based options, such as participation in carbon markets with forest- and land-based credits, or non-market-based options such as support for implementation of jurisdictional or landscape scale sustainability activities. Actions to achieve this goal include:

- Invest in landscape finance for forest protection activities that holistically address the major drivers of deforestation, conversion and land degradation, both market and non-market based. One such example is support of multi-stakeholder platforms that can promote constituency building, strategic planning, mapping, and project development.
- When using forest-based carbon credits to meet one's internal climate mitigation targets, use forest-based carbon credits to compensate for residual emissions only after first prioritizing emissions reductions within the actor's internal operations. In addition, consider investing in forest-based carbon credits as part of strategies to achieve societal decarbonization beyond companies' own value chains.
- In making purchasing decisions, prioritize 1) crediting standards that meet essential social and environmental integrity criteria, 2) high-quality credits from jurisdictional REDD+ programs 3) projects that are nested within high-quality jurisdictional REDD+ programs, and 4) credits from other high-quality projects and programs that reduce threats to standing tropical forests.
- Develop, scale up, and adopt governance frameworks which establish rules for public and private use of, and claims about, carbon credits.

# Forest governance

Effective forest governance results in clear policy and legal frameworks that are conducive to meaningful participation of all groups, holds governments accountable and promotes action toward the achievement of shared goals, such as forest protection and improved land tenure and access to natural resources.

The evidence shows that weak forest governance results in negative impacts, not just on forest landscapes and their ecosystems, but also on societies, and, in particular, those who are most dependent on forest lands, including IPs and LCs, poor people, and other marginalized groups. Where countries have successfully reduced deforestation, this success has resulted from robust governance systems.

THEME 4

**FOREST GOVERNANCE**

This assessment covers forest governance systems and the extent to which they support the goal of halting and reversing forest loss and land degradation by 2030. Elements of forest governance assessed include legal, policy, and institutional frameworks on sustainable management and protection of forests; demand-side measures and international engagement; law enforcement; tenure security, rights protection, and empowering Indigenous Peoples and local communities; and transparency, public participation, and access to justice. This report builds on previous NYDF Progress Assessment reports on NYDF Goal 10.

In a world where voluntary pledges are increasingly used to communicate intent to work collectively toward the 2030 forest goals, effective forest governance remains the foundation to ensure that actions are aligned toward a common objective.

## Findings

With only eight years left to reach the 2030 goals, governance of forests and forest lands is not yet strong enough to curb deforestation and degradation in line with those goals. Robust legal and policy instruments such as moratoria, strengthened enforcement capacity, smart conservation policies, and improved transparency and accountability are effective in protecting forests—as evidenced by remarkable reductions in deforestation in various periods since 2004 when these tools have been employed in Indonesia, Ghana, Côte d'Ivoire, Gabon, Guyana, and Brazil. Yet, some of these achievements have been reversed—notably in Brazil—or are at risk of being reversed as countries phase out or roll back policy gains through recent or proposed amendments.

In some countries, reforms and new initiatives have strengthened legal and policy frameworks governing forests and land use. Jurisdictions such as the Republic of the Congo and the United States have recently developed laws and policies to protect and sustainably manage their forests more effectively. Others, like the European Union (EU), Australia, Vietnam, and China are expanding on their demand-side regulations by developing laws addressing import of forest-risk commodities and enhancing traceability in the forest sector. However, most of these proposals lack sufficient detail, are in early stages of development, or have yet to be implemented at a sufficient scale to curb deforestation in line with the 2030 goal.

More inclusive approaches to policy development, implementation and enforcement have been adopted by a growing number of countries, reflecting both growing capacity and expertise within civil society and government recognition of the value of forest protection. This has resulted in improvements in policies and laws, and enhanced accountability of government and the private sector in, for example, the Republic of the Congo, Ghana, and Cameroon.

Law enforcement has also improved in a few tropical forest countries, for example contributing to reducing illegal timber exports from Lao People's Democratic Republic, and reduced deforestation in Indonesia. But there has also been a weakening of enforcement in some other countries and gaps in the existing legal frameworks, preventing effective enforcement. Furthermore, corruption is widespread in many forest areas, facilitating illegalities in forests and illegal trade in timber.

Finally, tenure insecurity is persistent in many countries, with at least 50 percent of the lands and territories held by IPs and LCs still not legally recognized. Reforms in Congo Basin countries such as the Republic of the Congo and Democratic Republic of the Congo (DRC) have strengthened IPs and LCs rights' recognition and protection. However, some other major tropical forest countries have weakened the legal protection of IPs and LCs' rights through regulatory and legislative changes, or have not accelerated implementation of relevant policies and laws so that IPs and LCs still face violations of their territorial rights, as well as violence and marginalization.

## Recommendations

Governments must take urgent steps to strengthen forest governance, including:

- Address weaknesses, overlaps, and ambiguities in forest legal frameworks; clarify unclear and overlapping laws, regulations, and institutional mandates; streamline legal frameworks in the forest and non-forest sectors; and improving the enforcement authorities' capacity to understand the law.
- Halt and reverse the weakening of legal frameworks and institutional capacities. Governments should carefully assess the long-term implications of recent rollbacks for sustainable development and forests. This includes recent amendments and introduction of laws that undermine forest protection and reforms weakening environmental and social protections in the wake of COVID-19.
- Secure IPs anf LCs' land tenure rights by developing and implementing clear and coherent laws that formally recognize and protect these rights.
- Implement inclusive processes for forest governance, including by embedding the participation and inclusion of forest-dependent communities in forest decision-making into the legal frameworks, ensuring that IPs and LCs are consulted on and have consented to decisions around their forest lands through a process of FPIC. More broadly, ensure participation of non-state actors in policy and law-making and implementation; land-use planning; law enforcement; and forest monitoring.
- Address regulatory weaknesses and ensure the proper implementation of environmental and social impact assessments (ESIAs) and of legislations on protected areas. Proper implementation of ESIAs includes, considering all direct, indirect, and cumulative negative impacts on forests and the people dependent on them, and prioritizing their avoidance in accordance with the mitigation hierarchy.

- Increase checks and balances to combat corruption in the land and forest sector. This requires, for example, limiting government officials' discretion in approving concessions; adopting robust rules to avoid conflicts of interest; implementing robust timber legality assurance systems and due diligence requirements; and ensuring compliance with or the strengthening of transparency laws.
- Strengthen enforcement by allocating sufficient resources to enforcement agencies, strengthening international cooperation, and empowering civil society and communities in monitoring.
- Strengthen land-use planning, including evidence-based spatial planning analyses and processes for allocation of concessions and ESIAs, in alignment with forest goals.

# Overarching forest goals

## Theme 1 Assessment

THEME 1

### OVERARCHING FOREST GOALS

Theme 1 covers the overarching forest goals of: 1) ending the loss and degradation of natural forests by 2030, and 2) restoring 350 million hectares of degraded landscapes and forestlands by 2030. This report assesses progress toward these targets. The current assessment builds on previous New York Declaration on Forests Goal 1 and Goal 5 progress reports and provides updates using the latest available data.

# Key Messages

Forests are fundamental to regulating and stabilizing the global climate. Meeting the Paris Agreement's ambition of limiting global warming to no more than 1.5°C will require global greenhouse gas (GHG) emissions to reach net-zero by the second half of this century. Eliminating deforestation by 2030 is a major milestone towards achieving the 2050 net zero target. Deforestation and degradation account for 10–12 percent of global GHG emissions. Halting deforestation and forest degradation as soon as possible, and no later than 2030, will substantially reduce the release of terrestrial GHG emissions to the atmosphere. Restoration of forests and other ecosystems can return significant amounts of carbon to stored biomass and help to realize the collective 2030 targets. Protecting forests also comes with clear benefits for people, biodiversity, and sustainable development.

Only eight years remain to achieve the twin global goals of halting and reversing deforestation and degradation by 2030. Despite encouraging signs, not a single global indicator is yet on track to meet the 2030 goals of stopping forest loss and degradation and restoring 350 million hectares of forest landscape.

To be on track to halt deforestation completely by 2030, a 10 percent annual reduction in forest loss is needed. However, deforestation rates around the world declined only modestly in 2021, with a decrease of 6.3 percent compared to the 2018-20 baseline. In the humid tropics, loss of irreplaceable primary forest decreased by only 3.1 percent. This is far short of the 10 percent annual reduction needed to be on track to halt deforestation completely by 2030. Globally, forests became more degraded in 2021, but at a slower rate than during the 2018-20 baseline period; if continued, this slowdown may put the world on track to meet the 2030 zero degradation target. There is a significant year-to-year fluctuation in both deforestation and degradation metrics, which makes it difficult to detect trends over short periods of time. Future assessments will monitor these processes to confirm the limited progress detected in 2021.

Tropical Asia is the only region currently on track to halt deforestation by 2030. While deforestation rates in Tropical Latin America and Africa decreased in 2021 relative to the 2018 to 2020 baseline, those reductions are still insufficient to meet the 2030 goal. Each year that passes without sufficient progress makes it increasingly difficult to meet global forest protection goals – and increases the annual reductions required in future years.

Notable progress in afforestation and reforestation efforts over the last two decades have resulted in new forest areas the size of Peru, with net gains of forest cover in 36 countries. However, overall losses exceeded gains over the same period, resulting in a net loss of 100 million hectares globally. It should be noted that forest cover gains, through reforestation and afforestation activities, do not compensate for forest losses in terms of carbon storage, biodiversity, or ecosystem services. Therefore, highest priority efforts should be directed towards safeguarding primary forests from losses in the first place.

# Introduction

## 1. Why track overarching forests goals?

Forests are fundamental to regulating and stabilizing the global climate. Meeting the Paris Agreement's ambition of limiting global warming to no more than 1.5°C will require global greenhouse gas (GHG) emissions to reach net-zero by the second half of this century.[1] Eliminating deforestation[a] by 2030 is fundamental to achieving the 2050 net zero target. Deforestation and degradation, account for about 10 -12 percent of global GHG emissions.[2] Despite this, forests are also a significant natural carbon sink, contributing net carbon removals from the atmosphere of up to 7.6 gigatons of carbon dioxide-equivalent ($GtCO_2e$) per year between 2001 and 2020.[3] While forests are still a net carbon sink globally, it is concerning that the difference between carbon removals and emissions from deforestation/degradation is shrinking in some regions, a phenomenon particularly evident in the Amazon.[4]

Halting deforestation and forest degradation as soon as possible – and no later than 2030 – will substantially reduce the release of terrestrial GHG emissions to the atmosphere. Meanwhile, restoration of forests and other ecosystems – through activities like reforestation, assisted natural regeneration, and improved forest management – can return significant amounts of carbon to stored biomass. Primary forest is, however, irreplaceable. No level of reforestation or afforestation can equate lost primary forest; degraded and deforested land can be restored, but the quality of carbon storage, biodiversity, and associated ecosystem services may never fully recover.[5] Together with agriculture and other land use activities, reforestation, assisted natural regeneration, and improved forest management practices could contribute an estimated reduction of 8-14 GtCO2e per year between 2020 and 2050, at a cost of less than USD 100 per ton.[6] Protecting forests also comes with clear benefits for people, biodiversity, and sustainable development.[7]

## 2. What are the building blocks for progress on 2030 forest goals?

Forest goals enshrined in the New York Declaration on Forests, the Glasgow Leaders' Declaration on Forests and Land Use, the Bonn Challenge, and other pledges recognize that halting deforestation and restoring forests requires a wide array of actors and balancing environmental, social, and economic interests. These goals provide the most concrete statements of global ambition to protect and restore forests and are critical to meeting the aspirations of the Paris Agreement, the Sustainable Development Goals (SDGs), and many other global ambitions.

The accompanying reports from this Assessment—focused on Sustainable production and development (Theme 2); Finance for forests (Theme 3); and Forest governance (Theme 4)—highlight critical actions that a variety of stakeholders must take to meet their forests goals. Governments, companies, and civil society must collaborate to accelerate forest action, supported by transparency and accountability. Governments must carefully consider whether voluntary action is a viable foundation to achieve the 2030 forest goals, and how the role of mandatory action, disclosure, and accountability should be increased. Meanwhile, companies need to urgently increase the scope and stringency of corporate action, whether voluntary or mandated. A

[a] Deforestation refers to a tree cover loss event that is: permanent in nature (e.g., when forest is converted to cropland or cleared for development) or when it occurs within humid tropical primary forest boundaries. See Annex A for a full list of key terms.

variety of private sector actors – companies, financial institutions, and philanthropies – have not yet leveraged their significant power to steer development and commodity production onto a sustainable trajectory in line with forest goals.

Additionally, funding for forests will need to dramatically increase by up to 200 times to meet 2030 goals. Indigenous Peoples (IPs) and local communities (LCs) are the most effective stewards and guardians of their forest territories but receive far less funding than their estimated finance needs for securing tenure rights and preserving forest ecosystems. Financial institutions and companies across sectors must recognize and act on the inherent business risks presented by deforestation and forest degradation and put in place measures and policies to combat this risk. Public sector actors must take concrete and far-reaching steps to implement and expand their finance commitments and align fiscal and financial policies with forest goals. Where private sector actors choose to invest in nature conservation and restoration, they must ensure that they are supporting high-quality and high-integrity interventions in line with the mitigation hierarchy[b] and science-based targets.

## 3. How does this report assess progress?

This report provides a summary of global progress on halting deforestation and degradation and advancing forest restoration. Tracking progress toward these goals uses indicators of gross deforestation, humid tropical forest loss, emissions from forests, forest landscape integrity, and tree cover gain (Annex B: Methodology). A clearer picture of progress or lack thereof will emerge as more years of data become available because all forest change indicators fluctuate quite strongly from year to year. The forest loss and degradation sections of this assessment largely focus on change in 2021 compared to a baseline period of 2018-20. Although the data shows promising changes in the right direction, the most reliable trends to take note of are those that have been sustained for several years in succession. Thus, these trends will be clarified with subsequent years-worth of data. Additional methodological notes and analysis are available in the Technical Annex.

This report focuses almost exclusively on forests, excluding other ecosystems, as the current mandate of the Forest Declaration Assessment is to track progress toward the 2030 forest goals. This focus reflects both the Forest Declaration Assessment's history as an initiative to track progress on the New York Declaration on Forests as well as the disproportionate attention that forests have received on the international stage compared to other biomes.[8] The focus on forests does not imply that other ecosystems are not also important for meeting climate change and biodiversity goals.

This report does not detail the causes of, nor recommend solutions for, tackling deforestation and forest degradation. These topics are covered in three complementary thematic reports on Sustainable production and development, Finance for forests, and Forest governance. Country-level examples and case studies are included from assessments of progress conducted by the Forest Declaration Assessment team on 13 countries[c] in 2022. Finally, this report focuses primarily on developing countries, due to the impact of tropical forests on climate and biodiversity. The Assessment Partners aim to include the global north more prominently in future years' assessments.

[b] A decision framework that allows for the systematic consideration of negative forest impacts and mitigation options.
[c] Cambodia, Cameroon, Canada, Colombia, Democratic Republic of the Congo, Dominica, Ecuador, Gabon, Indonesia, Kenya, Liberia, Republic of the Congo, and Vietnam.

# Findings

## 1. What progress has been made?

None of the indicators assessed suggest that the world is yet on track to meet the goals of halting forest loss or degradation or restoring 350 million hectares (Mha) by 2030.[d] Each year that passes without sufficient progress makes it increasingly difficult to meet global forests goals by 2030.

There is no single solution for halting deforestation and forest degradation or accelerating restoration around the world. Yet, coordinating actions across sectors to align policies with forest goals, to direct green finance to forests, and to improve the effectiveness of forest governance can bring private and public sector actors closer to their forest goals and pledges. In this regard, some regions and countries have had more success than others.

Some countries have implemented comprehensive forest policies, consider forests in their development and economic policies, and tackle poverty reduction and forest protection in tandem (e.g., through payment for ecosystem services or REDD+ programs). In other jurisdictions, private and public sector actors effectively collaborate to address deforestation. On the other hand, many countries still lack sufficient resources and institutional capacities for effective forest governance. More green finance is needed to unlock the full potential of forest protection interventions such as REDD+.

Country case studies throughout this brief provide a closer look at success factors for achieving forest goals in specific country contexts. Further details are covered in the other three thematic reports on Sustainable production and development; Finance for forests; and Forest governance.

### 1.1 Halting deforestation

*The global community has rallied around the goal of "halting deforestation" by 2030. No perfect measure of deforestation exists, so this assessment uses a set of proxies. The first indicator estimates the share of global tree cover loss[9,e] that is likely to have been permanently converted to a new land use, based on the driver of loss.[10] The second estimates the loss of mature, natural humid tropical primary forests.[11] The third estimates the emissions from these forest disturbances, given forests' significant contribution to meeting the Paris Agreement goals.*

*"Halting" deforestation is defined here as reaching zero gross deforestation[f] by 2030, defined as no permanent land use change from forests to non-forests, and no additional clearing of primary forests, irrespective of any gains in area due to reforestation elsewhere. Assuming a straightforward linear pathway to 2030, reaching the 2030 target will require a 10 percent reduction in the deforestation rate each year from 2021 through 2030, compared to a baseline of the average deforestation rate from 2018-2020. Below, the 2021 deforestation rate is assessed against the 2018-2020 baseline to determine if the world is on track to meet the 2030 goals.*

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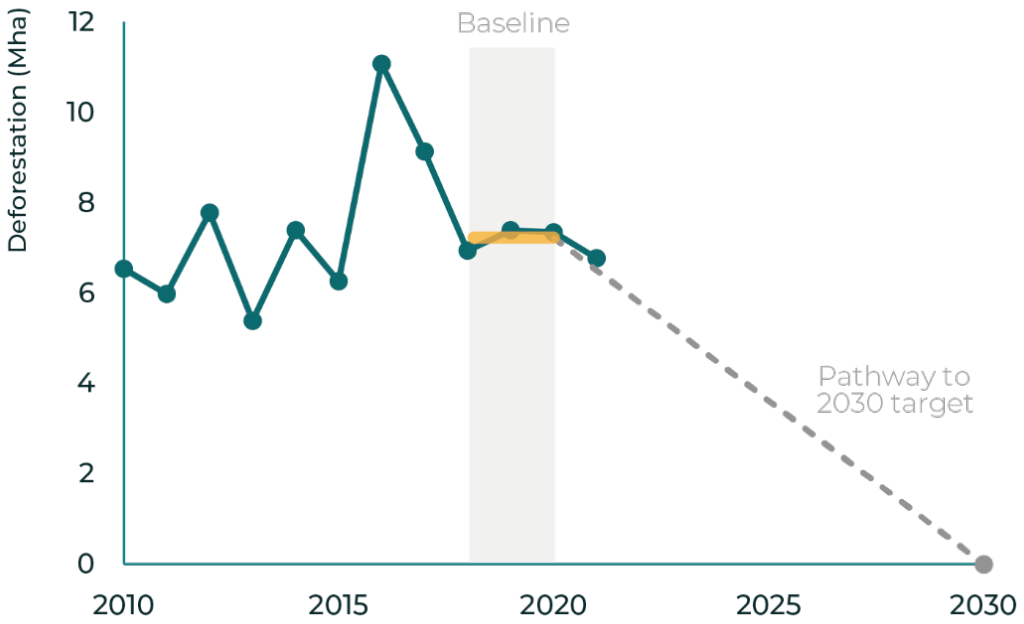
[d] Forest restoration refers to a suite of interventions aimed at halting and reversing deforestation and forest degradation. Forest protection includes reducing deforestation and forest degradation, restoring degraded forestlands, and sustainable management of production forests, with involvement of governments, the private sector, IPs and LCs, and other actors. See Annex A for full list of key terms.

[e] Tree cover loss refers to a loss event that may or not be permanent. Non-permanent tree cover loss routinely occurs in the context of logging, fire, or swidden agriculture. Tree cover loss data is often analyzed as a first step to measure deforestation. See Annex A for a full list of key terms.

[f] The Glasgow Leaders' Declaration on Forests and Land Use does not specify whether it aims to reach *gross* or *net* zero deforestation by 2030. The 2021-2030 benchmark presented here uses the "gross zero" interpretation. Indicators tracking a less ambitious "net zero" pathway will be developed in future assessments as data becomes available, e.g., by using the gross forest loss and gain of the upcoming 2025 FAO Forest Resource Assessment. See Annex A for a full list of key terms.

Global gross deforestation amounted to 6.8 Mha (ha) in 2021 – an area that is comparable in size to the Republic of Ireland – with 3.9 $GtCO_2e$ of associated GHG emissions.[g] Despite the alarming scale of loss, the slightly reduced pace of deforestation represents an improvement in relation to the 2018-2020 baseline. Still, this improvement is insufficient for meeting the 2030 targets. The 2021 deforestation rate experienced a modest reduction of 6.3 percent compared to the 2018-2020 baseline, which is far short of the yearly 10 percent reduction required to achieve zero deforestation by 2030. Each year that reductions fall short of the annual target, the total reductions required in future years to meet the 2030 target increase (**Figure 1**).

**Figure 1. Global deforestation rate over the 2010-2021 period, in million hectares, and the pathway to reach the 2030 global gross zero deforestation target**




Source: Figure based on original analysis for this report using data from Hansen et al. 2013. Only tree cover loss that is deemed permanent (Curtis et al., 2018) or that occurs within humid tropical primary forests is considered here.
Note: The dashed line indicates that a reduction rate in deforestation of 10 percent per year, as compared to the 2018-2020 baseline, is necessary to reach the 2030 zero gross deforestation target. The reduction in deforestation rate of 6.3% that occurred in 2021 falls far short of the target. The data before and after 2015 are not directly comparable, as the methodology to detect the tree cover loss has been improved and may result in higher estimates of loss for recent years compared to earlier years, although this does not affect the assessment of progress since 2020.[12]

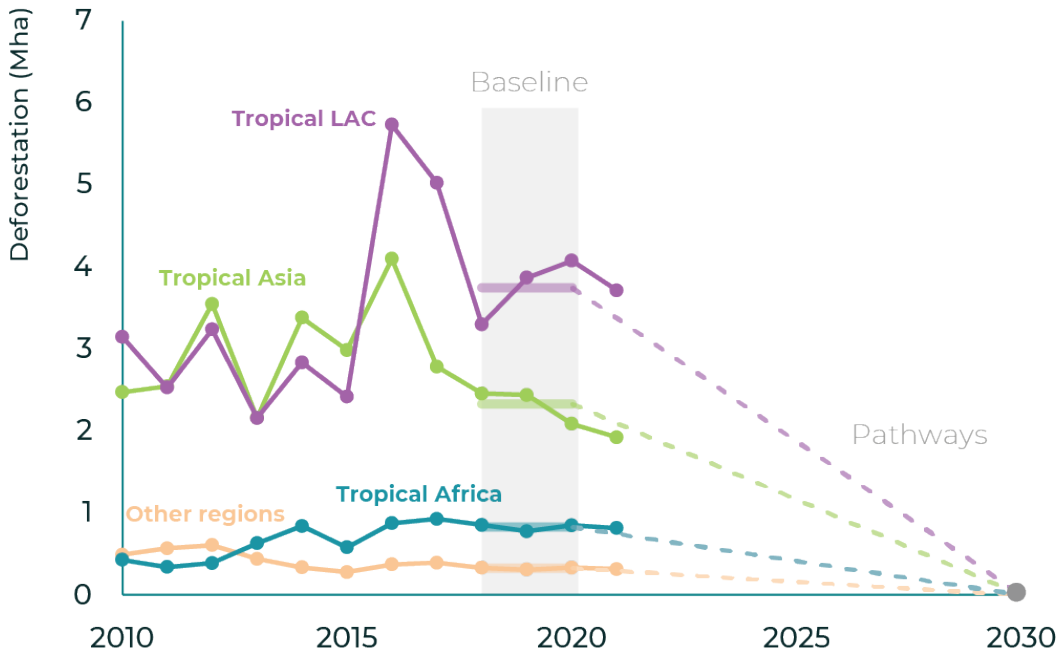
### ASSESSING REGIONAL DIFFERENCES

The vast majority (96%) of global deforestation takes place in tropical regions and, therefore, the vast majority (98%) of the decrease in deforestation will also need to come from those regions (**Figure 2**).

Tropical Asia experienced a decrease in forest loss from the baseline and is the only region currently on track to halt deforestation by 2030. Tropical Latin America and Africa also saw a decrease relative to the baseline but are not yet aligned with the 2030 goal. Both regions will need to redouble their efforts in 2022 and beyond to align with the 2030 zero deforestation pathway and Tropical Asia will need to sustain the progress it has recently made.

[g] If deforestation were a country, it would globally rank third in GHG emissions after China and the US.

**Figure 2. Global deforestation rate by region over the 2010-2021 period, in million hectares, and the pathway to reach the 2030 gross zero target from the 2018-2020 baseline**




Source: Figure based on original analysis for this report using data from Hansen et al. 2013. Only tree cover loss that is deemed permanent (Curtis et al., 2018) or that occurs within humid tropical primary forests is considered here.
Note: The data referring to other regions are used here for reference, to highlight that the bulk of deforestation takes place in only two global regions. The data before and after 2015 are not directly comparable, as the methodology to detect the tree cover loss has been improved and may result in higher estimates of loss for recent years compared to earlier years, although this does not affect the assessment of progress since 2020.[13]

CASE STUDY

### GHANA AND CÔTE D'IVOIRE

While Ghana and Côte d'Ivoire have lost significant forest cover in the past, in 2021, deforestation decreased in those countries by 13 percent and 47 percent, respectively, compared to 2018-2020. This recent success puts them on track with the 2030 pathway. Since 2017, the governments of Ghana and Côte d'Ivoire have worked with 35 companies, which together account for 85 percent of the world's cocoa trade, to improve the sustainability of resource use in forest landscapes and address the underlying drivers of deforestation such as poverty. The public-private Cocoa and Forests Initiative (CFI), under which this collaborative has taken place, has worked to improve stakeholder collaboration, policies, finance for restoration, and to strengthen governance structures. Under the CFI umbrella, companies are working to improve the transparency of their supply chains and smallholders are adopting sustainable agriculture practices such as agroforestry, while increasing productivity. While it is difficult to identify any single drivers of reduced deforestation, public-private partnerships like CFI present a compelling example for other regions on how collaboration between stakeholders can be built. Going forward, additional action is necessary to address poverty among smallholders and to disincentivize agricultural expansion into forests as a strategy to increase income.[14]

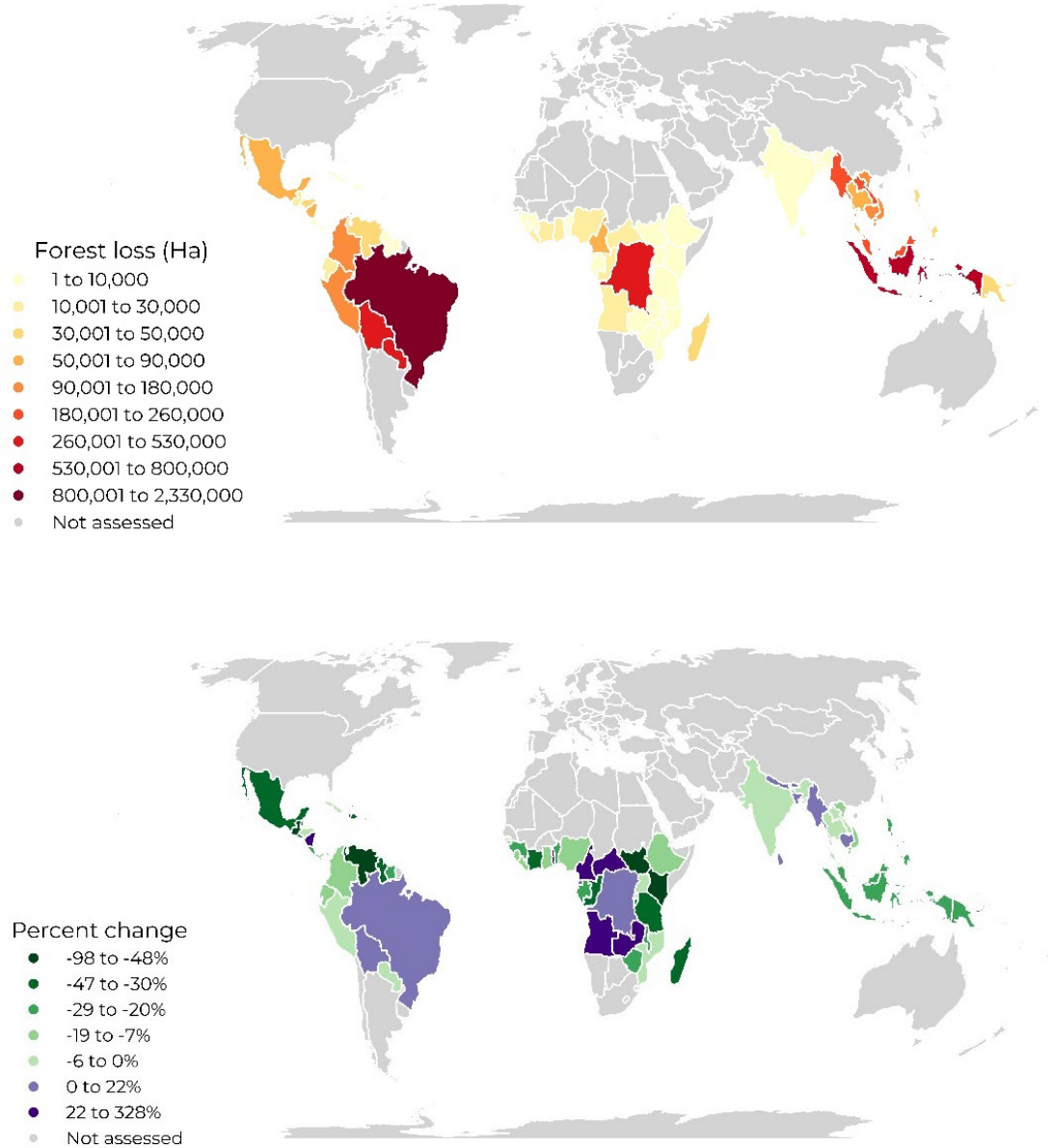
Of the 10 countries with the highest total deforestation, half saw a reduction of deforestation rates in 2021 compared to the 2018-2020 baseline. However, globally, the deforestation indicator is not on track. A key reason for this is that four out of the five top countries with largest absolute deforestation increased their deforestation rates in 2021 – namely Brazil, Bolivia, Democratic Republic of the Congo (DRC), and Paraguay (**Figure 3**).

Brazil remains the largest contributor to deforestation globally. Despite Brazil's outsized influence and increasing deforestation trend, tropical Latin America overall has experienced net 0.033 Mha decrease in deforestation in 2021 compared to the 2018-2020 baseline. This decrease in deforestation can mainly be attributed to Mexico, Venezuela, Colombia, Guatemala, and Peru, all of which combined resulted in a joint decrease in deforestation of 0.140 Mha. This decrease was larger than the combined increases experienced in other countries, namely Brazil and Bolivia, where the deforestation trends are diverging from the 2030 target. In practice, increasing deforestation rates in major forest countries will make it very difficult to achieve the 2030 goal globally, regardless of other countries actions (country data available in **Annex B**).

In Tropical Asia, the countries with the largest absolute increase in deforestation are Cambodia and Myanmar. In sharp contrast, Indonesia, the largest deforester in Asia, experienced a sizeable reduction in deforestation in 2021 in relation to the baseline. Similarly, Malaysia, another country with substantial forest cover, experienced a relative reduction.

The DRC and Cameroon are the largest contributors to deforestation in tropical Africa. While the DRC's deforestation rate increased minimally in 2021, its absolute 2021 deforestation accounts for over 60 percent of Tropical Africa's total deforestation. Cameroon experienced a 20 percent increase in its deforestation rate in 2021 relative to the 2018-2020 baseline.

**Figure 3. Country-level deforestation (in hectares) in 2021 (Top figure) and percent change in deforestation compared to the 2018-2020 baseline scenario (Bottom figure).**

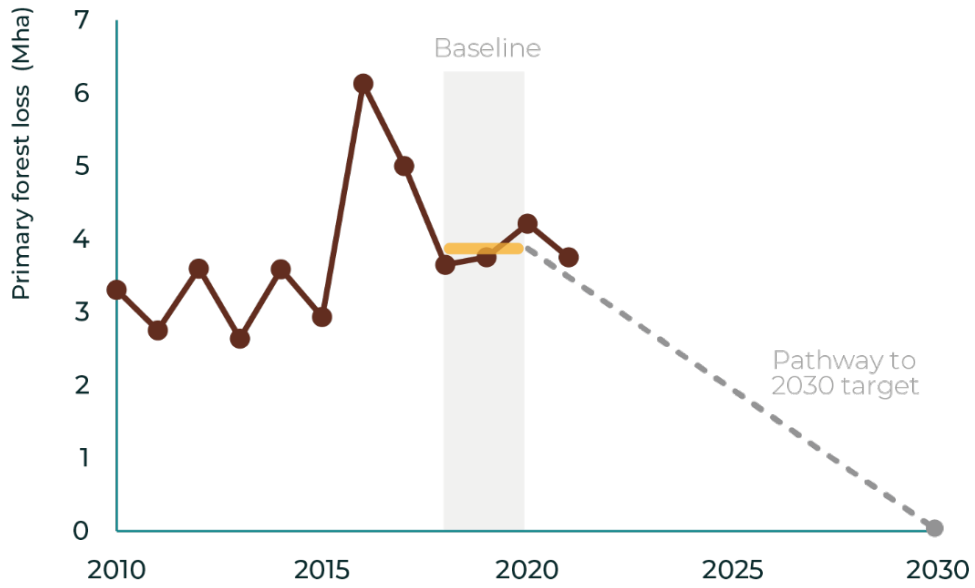



Source: Figure based on original analysis for this report using data from Hansen et al. 2013. Only tree cover loss that is deemed permanent (Curtis et al., 2018) or that occurs within humid tropical primary forests is considered here.
Note: Relative change in deforestation facilitates the comparison of deforestation across countries..

## 1.2 Humid tropical primary forest loss

Tropical and subtropical forests hold about a third of irrecoverable carbon and biodiversity, experience the majority of deforestation globally, and can take decades or centuries to recover from loss.[15] As no quantification of global primary forest loss is available, this indicator is based on humid tropical primary forest only. In 2021, 3.7 Mha of humid tropical primary forest were cleared, with 2.5 GtCO2e of associated GHG emissions. This represents a 3.1 percent decrease in deforestation in 2021 compared to the 2018-2020 baseline. While this does indicate improvement, the decline of deforestation within humid tropical forests is slower than the decline in global deforestation (6.3%) – and both are well below the 10 percent annual reduction needed to meet 2030 goals **(Figure 4**).

**Figure 4. Global tropical humid primary forest loss over the 2010-2021 period, in million hectares, and the pathway to reach the 2030 gross zero target from the 2018-2020 baseline**

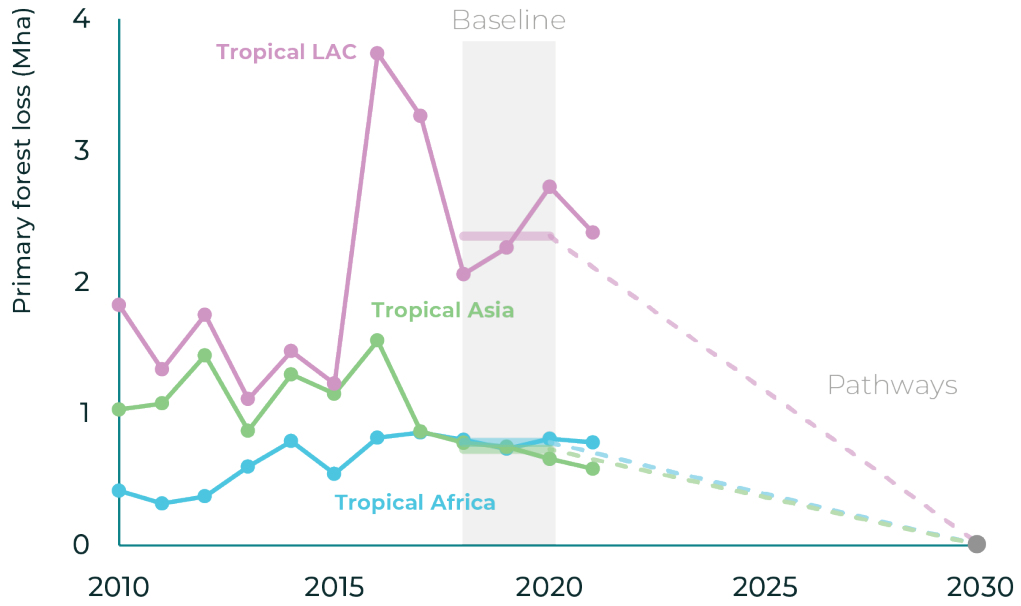



Source: Figure based on original analysis for this report using data from Hansen et al. 2013. Only tree cover loss occurring within primary forest boundaries is considered (Turubanova et al., 2018).
Note: The dashed line indicates that a reduction rate in deforestation of 10 percent per year, as compared to the 2018-2020 baseline, is necessary to reach the 2030 zero gross deforestation target. The data before and after 2015 are not directly comparable, as the methodology to detect the tree cover loss has been improved and may result in higher estimates of loss for recent years compared to earlier years, although this does not affect the assessment of progress since 2020.[16]

Tropical Asia experienced a 20 percent reduction in 2021 against the baseline – the only region that experienced a reduction in humid tropical forest loss. Tropical Asian countries have now experienced five consecutive years of decreasing primary forest loss and the region is on track to reach the 2030 target. This progress should be celebrated and used as an example for other regions. In contrast, yearly loss in Tropical Africa has remained constant and has increased by 1.2 percent in Tropical Latin America (**Figure 5**).

Cameroon, Bolivia, Lao Peoples' Democratic Republic (Lao PDR), Cambodia, Brazil, and, DRC all experienced increases in the rate of primary forest loss in 2021, with the four first showing over double-digit increases (see Annex F for full dataset). Only four countries reduced their rate of humid primary forest loss in 2021: Malaysia (-36%), Indonesia (-35%), Colombia (-16%), and Peru (-6%).

**Figure 5. Tropical humid primary forest loss by region over the 2010-2021 period, in million hectares, and the pathway to reach the 2030 gross zero target from the 2018-2020 baseline**




Source: Figure based on original analysis for this report using data from Hansen et al. 2013. Only tree cover loss occurring within primary forest boundaries is considered (Turubanova et al., 2018).
Note: The dashed line indicates the reduction rate, as compared to the 2018-2020 baseline, that is necessary for each tropical forest region to reach the 2030 zero gross deforestation target. The data before and after 2015 are not directly comparable, as the methodology to detect the tree cover loss has been improved and may result in higher estimates of loss for recent years compared to earlier years, although this does not affect the assessment of progress since 2020.[17]

CASE STUDY

**INDONESIA**

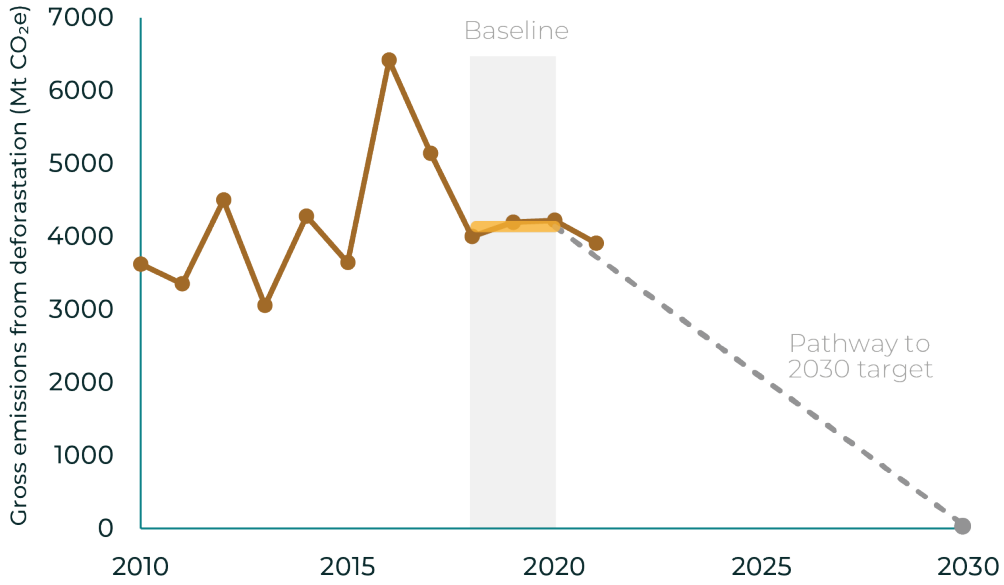
Indonesia is currently on track to meet its 2030 deforestation goal: The rate of primary forest loss has declined over the past five years and was 25 percent lower in 2021 than in 2020.[18] Action by both corporations and the government to address deforestation from palm oil production has been key to achieving this progress. In 2018, the Roundtable on Sustainable Palm Oil tightened its sustainability certification requirements to prohibit deforestation and peatland clearing. Also in 2018, the government imposed a moratorium on new oil palm plantations and enhanced law enforcement. By 2020, more than 80 percent of palm oil refiners had adopted No Deforestation, No Peat and No Exploitation commitments. As a result, deforestation linked to palm oil in 2020 reached its lowest rate in 20 years – and is continuing to fall during a period of expansion of palm oil production.[19] Indonesia has also included targets for peatland restoration in its NDC and requires companies to report on restoration of peat ecosystems in their concession areas.[20]

However, the palm oil moratorium expired in 2021, and there is now a risk that plantation expansion and deforestation will increase in response to palm oil prices, which have rising since 2020.[21] Another concern is recent changes to the forest legal framework that would undermine forest protection and previous achievements if implemented (see Theme 4 report on Forest governance for more).

### 1.3 Greenhouse gas emissions from forest loss

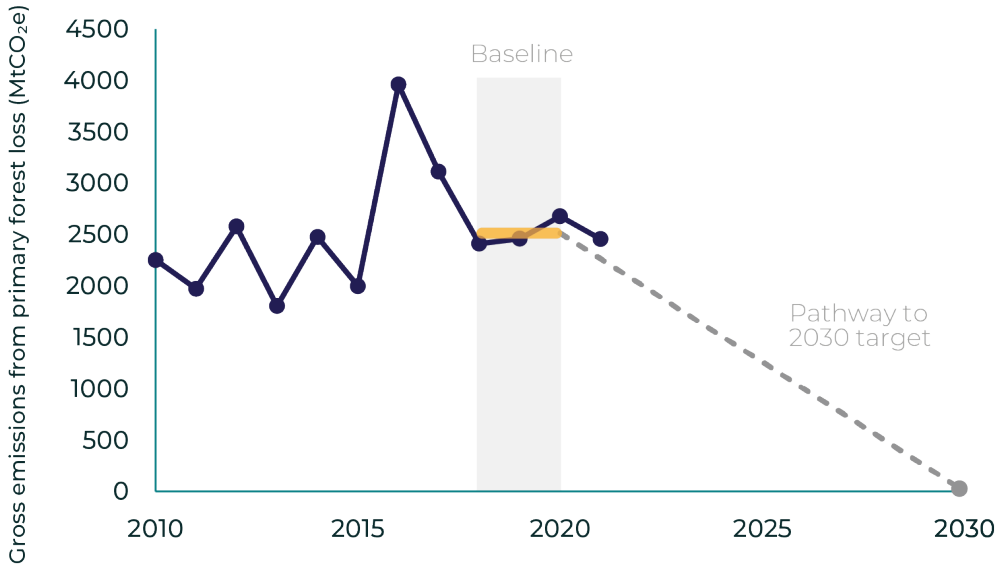
Global average baseline gross emissions from deforestation were 4.1 $GtCO_2e$ per year in 2018-20. Emissions in 2021 decreased by 5.5 percent from this baseline, with a total of 3.9 $GtCO_2e$ emissions from deforestation in 2021 (**Figure 6**). This decrease is not on track with the 10 percent, or 0.39 $GtCO_2e$/year, decrease required to reach the 2030 target.

**Figure 6. Global gross emissions from deforestation over the 2010-2021 period, in megatons $CO_2$-equivalent, and the pathway to reach the 2030 gross zero target from the 2018-2020 baseline**




Source: Figure based on original analysis for this report using data from Harris et al., 2021, Hansen et al. 2013, and Curtis et al. 2018, updated through 2021.
Note: The dashed line indicates that a reduction rate in emissions from deforestation of 10 percent per year, as compared to the 2018-2020 baseline, is necessary to reach the 2030 zero emissions from deforestation target. The data before and after 2015 are not directly comparable, as the methodology to detect the tree cover loss has been improved and may result in higher estimates of loss for recent years compared to earlier years, although this does not affect the assessment of progress since 2020.[22]

**Figure 7. Global gross GHG emissions from humid tropical primary forest loss over the 2010-2021 period, in megatons $CO_2$-equivalent, and the pathway to reach the 2030 gross zero target from the 2018-2020 baseline**




Source: Figure based on original analysis for this report using data from Harris et al., 2021, Hansen et al. 2013, and Turubanova et al., 2018, updated through 2021.
Note: The dashed line indicates that a reduction rate in emissions from deforestation of 10 percent per year, as compared to the 2018-2020 baseline, is necessary for tropical forest regions globally to reach the 2030 zero emissions from deforestation target. The data before and after 2015 are not directly comparable, as the methodology to detect the tree cover loss has been improved and may result in higher estimates of loss for recent years compared to earlier years, although this does not affect the assessment of progress since 2020.[23]

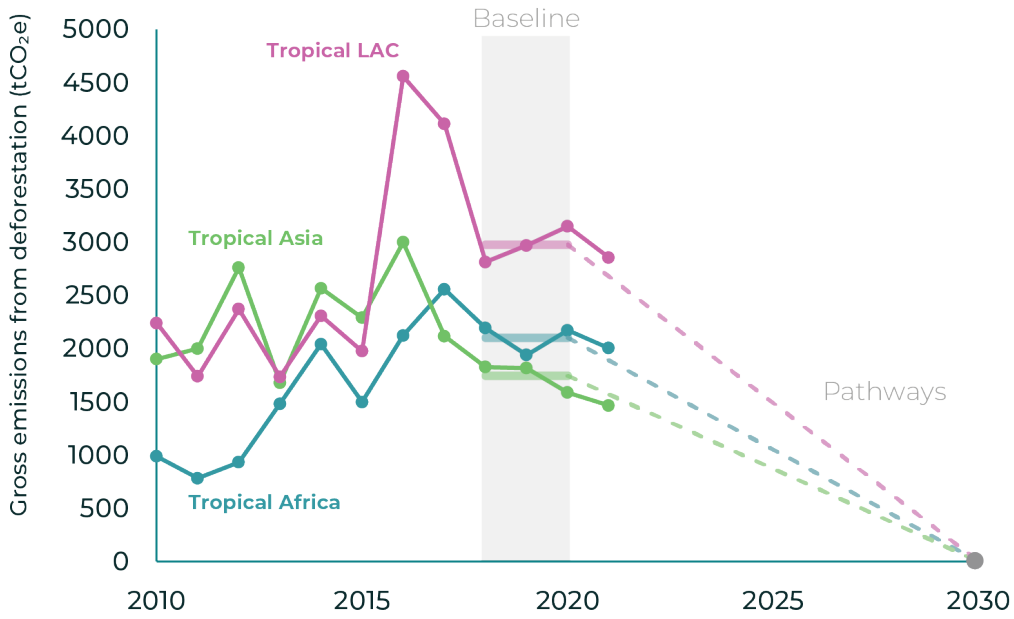
The average 2018-20 global baseline emissions from humid tropical primary forest loss were 2.5 $GtCO_2e$ per year. With 2.46 $GtCO_2e$ emitted due to humid primary forest loss in 2021, emissions have decreased by 2.4 percent compared to the baseline (**Figure 7**).

Consistent with their deforestation trends, Indonesia and Malaysia saw the largest reductions in emissions from deforestation in relative terms in 2021 – reducing deforestation by 28 percent (450 $MtCO_2e$) and 26 percent (121 $MtCO_2e$), respectively. Meanwhile, Bolivia and Brazil presented the largest relative increases in emissions in 2021 by 12 percent (240 $MtCO_2e$) and 5.6 percent (1400 $MtCO_2e$), respectively (see **Annex F** for dataset).

The countries with the greatest relative increases in GHG emissions from humid primary forests were Bolivia (23% increase in relation to the baseline), Cameroon (23%), Lao PDR (16%), Cambodia (12%), and Brazil (9%). Lao PDR has experienced an overall decrease in deforestation but has disproportionately increased its rate of loss in high-ecological value forests (see Annex F).

Tropical Asian countries overall saw a reduction in emissions from deforestation in 2021. As with deforestation, tropical Asia was the only region that saw a reduction in emissions from humid tropical forest loss. Asian countries have now experienced five consecutive years of decreasing emissions from primary forest loss and the region is on track to reach the 2030 target. Annual emissions from deforestation decreased slightly in tropical Africa and tropical Latin America in 2021. However, emissions from deforestation have generally been increasing in those regions since 2010, and both regions will need significant reductions to align with the 2030 zero emissions from deforestation target (**Figure 8**).

**Figure 8. Regional gross GHG emissions from deforestation by region over the 2010-2021 period, in tons $CO_2$-equivalent, and the pathway to reach the 2030 gross zero target from the 2018-2020 baseline**




Source: Figure based on original analysis for this report using data from Harris et al., 2021, Hansen et al. 2013, and Turubanova et al., 2018, updated through 2021.
Note: The dashed lines indicate the reduction rate in emissions from deforestation, as compared to the 2018-2020 baseline, necessary for each tropical forest region to reach the 2030 zero emissions from deforestation target. The data before and after 2015 are not directly comparable, as the methodology to detect the tree cover loss has been improved and may result in higher estimates of loss for recent years compared to earlier years, although this does not affect the assessment of progress since 2020.[24]

CASE STUDY

**GABON**

Gabon, which has over 90% of its total area covered by forests,[25] has been able to reduce its already low rate of deforestation by 28% between 2018-2020 and 2021. In 2021, Gabon was the first country to receive payments from the Central African Forest Initiative for reducing carbon emissions from deforestation. Gabon was awarded USD 17 million for forest protection measures such as creating 13 new national parks and implementing a project to combat illegal logging.[26] These measures have also contributed to decreased tree cover loss from shifting agriculture and artisanal small-scale mining. To address the growing risk to forests from commercial agriculture, the government of Gabon in 2019 adopted the Roundtable on Sustainable Palm Oil Principles and Criteria as national standards for palm oil production[27] and mandated in 2018 that all forest concessions should be certified under Forest Stewardship Council standards by 2022.[28] Further, Gabon has created AGEOS, an agency specialized in forest mapping using tele-detection methods to monitor the forest cover in real-time.

Additionally, Gabon developed an Emerging Gabon Strategic Plan (PSGE)[29], which outlines actions to ensure sustainable resource management while also reducing poverty and accelerating economic growth. Gabon has not yet implemented a Strategic Planning and Land Use Program (PNAT). But with the help of the Central African Forest Initiative (CAFI), the country is currently developing one for an improved spatial planning system to determine which areas should be developed for agriculture, mining, infrastructure development, and conservation.

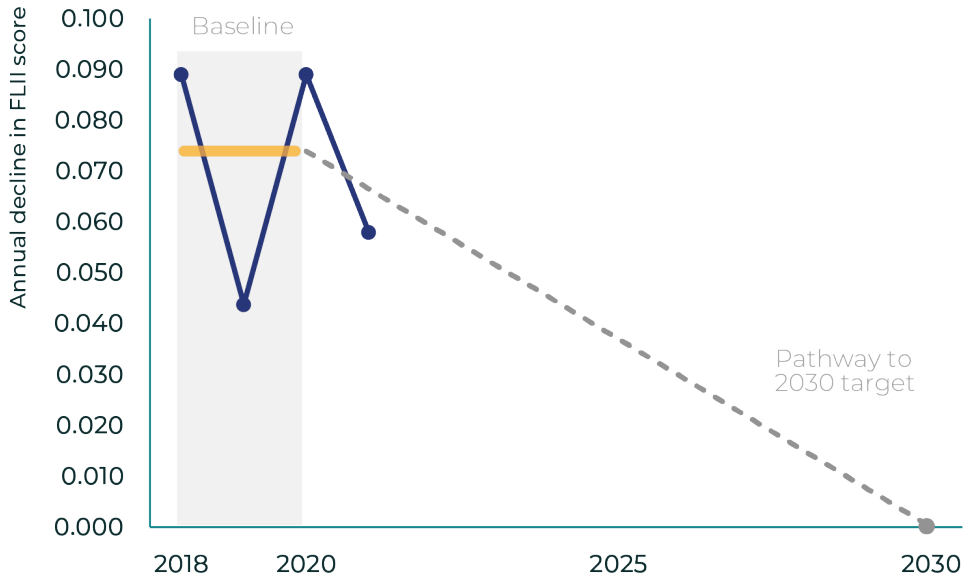
## 1.4 Degradation

*While deforestation is the process of clearing forests permanently, forest degradation leads to a forest that still exists but is diminished in qualities such as carbon storage, biodiversity, and other ecosystem services. Degradation can often be a precursor to deforestation. Forest degradation can be measured in many ways. The Forest Landscape Integrity Index (FLII)[30] indicator tracks the ecological integrity of forests using data on the intensity and distribution of human pressures known to cause degradation, combined with observed losses in forest connectivity. Because the Glasgow Leaders' Declaration called for a halt (even a reversal) in land degradation by 2030, the FLII benchmark is equivalent to a 10 percent reduction in new degradation each year compared to the 2018-2020 baseline, reaching zero new degradation by 2030.*

According to the FLII indicator, degradation of forests is ongoing both globally, with an average loss of 0.074 FLII points per year, and in all individual regions. Yet, the global rate of degradation appears to have slowed down in 2020-21, with a loss of 0.058 FLII points, thus roughly aligning itself with the annual degradation rate target (**Figure 9**). However, annual losses show substantial year-to-year fluctuations, demanding further years of data before a clear trend can emerge.[h] Moreover, since observed rates increased in four out of eight global regions, it cannot yet be concluded that the world is on track for this target.

[h] Note: The analysis of the FLII presented here quantifies the relative change in integrity, but not changes in the area of forest with differing degrees of degradation. In future years, the Assessment Partners aim to include this additional information, as well as associated emissions impact.

**Figure 9. Annual change in global forest degradation as measured by the change in Forest Landscape Integrity Index (FLII)**




Source: Figure based on original analysis for this report using data from Grantham et al., 2020.
Note: This figure shows the global annual change in forest degradation as quantified by the Forest Landscape Integrity Index (FLII) score. The solid line shows the annual change in FLII compared to the previous year. Positive values indicate a FLII decline, and therefore an increase in degradation, over the 2018-2021 period. The dashed line represents the pathway to reach the 2030 zero annual degradation target from the 2018-2020 baseline. Degradation in 2021 decreased in relation to the baseline. In contrast to other indicators, data on the FLII index is only available from 2017.

## 1.5 Restoration

*The agreed global goal on restoration is to restore 350 Mha of lost and degraded forest landscapes by 2030. Global data on forest cover and tree cover gain using remote sensing technology is not yet available. However, in late 2021, the University of Maryland and World Resources Institute produced new prototype data on forest cover gain for the period 2000 to 2020, is used in this analysis as a proxy for forest restoration.*

*In addition, this Assessment analyzes how much forest land can be realistically restored between 2020 and 2050, measuring the potential to shift from a non-forest cover to a forest cover state through afforestation and reforestation activities, as well as natural forest regrowth. These indicators should be interpreted as a proxy for forest restoration opportunity potential.*

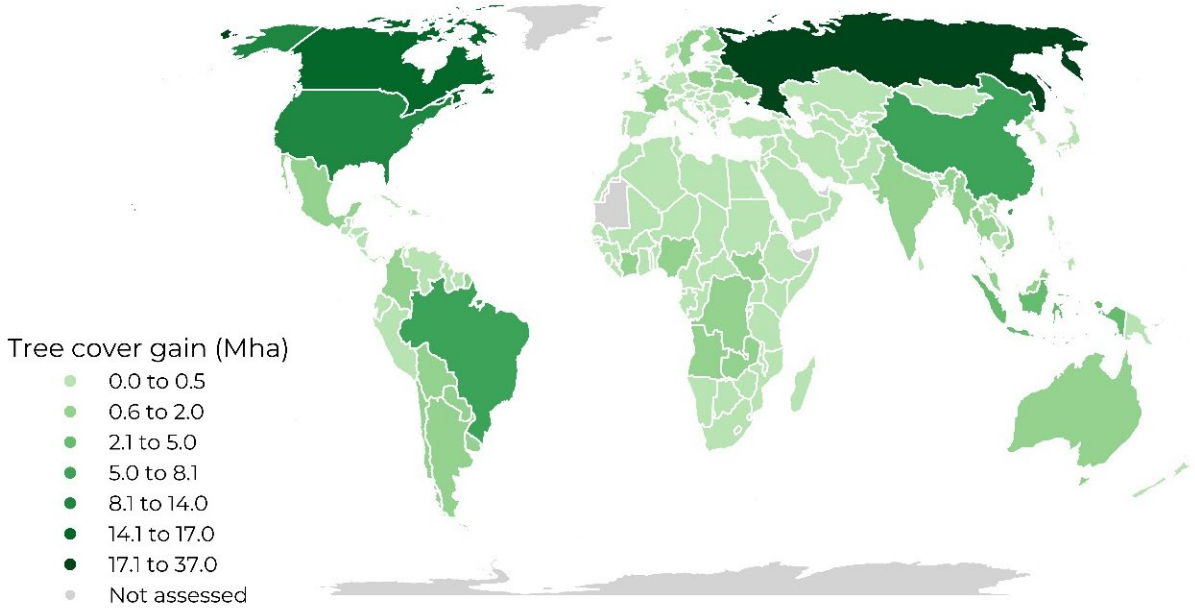
### TREE COVER GAIN, 2000-2020

Over the previous two decades (2000-2020), global tree cover[i] increased by roughly 130.9 Mha – an area slightly larger than Peru. Three quarters of the global gain was concentrated in 13 countries; the largest gains were observed in Russia (28.4% of the total), Canada (13.0%), the United States (10.7%), Brazil (6.2%), and China (5%) (**Figure 10**). China saw the largest net tree cover gains (2.1 Mha).[31]

[i] The data on tree cover gain is the best-available proxy for forest gain. Tree cover gain includes gain from natural regrowth and restoration interventions, as well as gain from industrial tree plantations and agricultural tree crops, which are not typically considered forests.

However, these gains were offset by 231.4 Mha of tree cover loss in the same countries during that period. In total, although there was a global net loss of 100.5 Mha of tree cover,[j] thirty-six countries gained more tree cover than they lost (**Figure 11**),[32] which demonstrates potential for scaling up restoration and reversing forest loss globally. After China, India (0.87 Mha), Uruguay (0.54 Mha), Belarus (0.52 Mha), and Ukraine (0.43 Mha) presented the largest net gains. Globally, 118.6 Mha (approximately 90 percent) of the total tree cover gain – likely due to natural regeneration and assisted natural regeneration – occurred outside known plantations.[33]

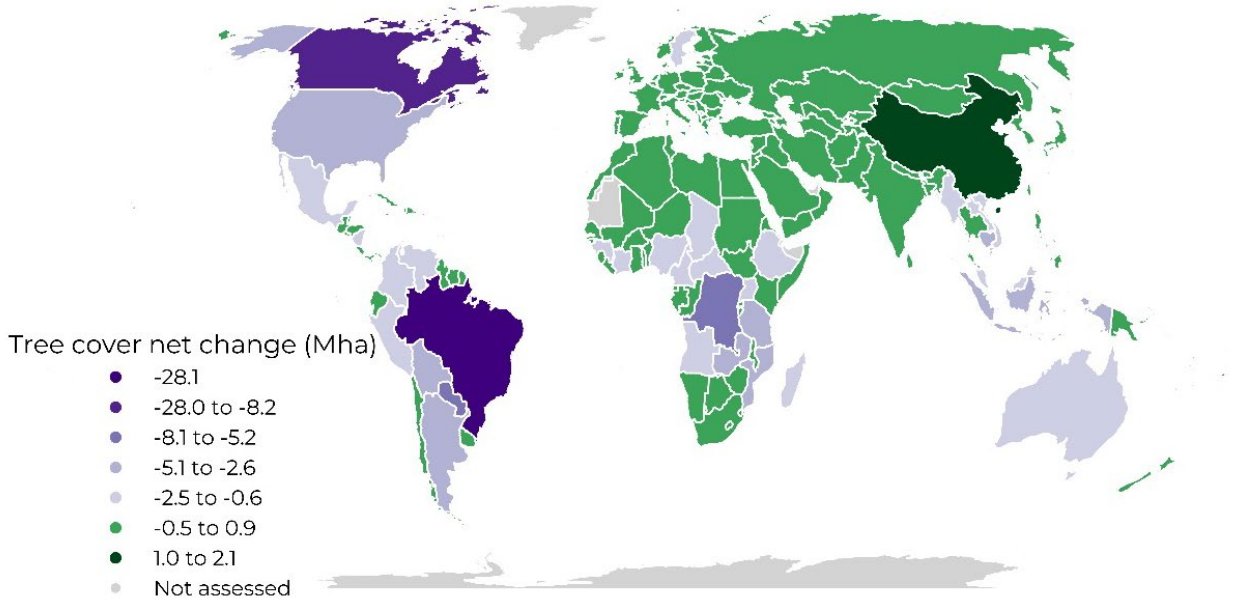
**Figure 10. Tree cover gain between 2000 and 2020, in million hectares**




Source: Data extracted from Potapov et al. (2022)[34]

[j] It is important to highlight that tree cover gain does not cancel out tree loss. Although forest cover gain is occurring in many places, it doesn't negate the impacts of loss – especially of primary forests.

**Figure 11. Tree cover net change over the 2000-2020 period, in million hectares**



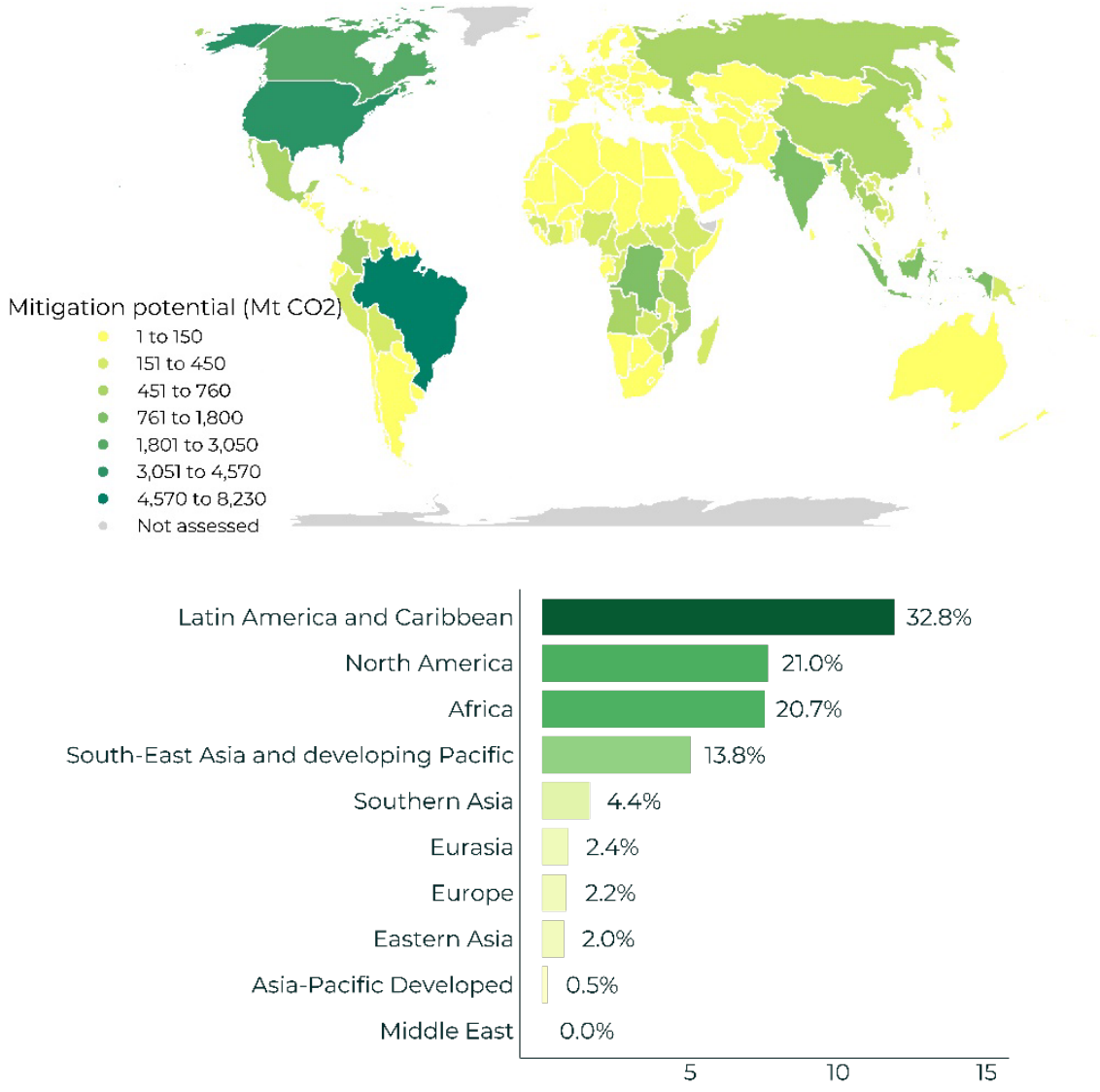

Source: Data extracted from Potapov et al. (2022)[35]

## COST-EFFECTIVE MITIGATION POTENTIAL FROM RESTORATION

The cost-effective mitigation potential[k] identifies the pathway to the 2030 global restoration goal and assesses over the coming decade whether the world is on track. The global cost-effective mitigation potential of restoration over the 2020-2050 period amounts to 36.252 billion $tCO_2e$ (**Figure 12**, top). At a regional level, Latin America and the Caribbean have the largest cost-effective mitigation potential (32.8% of the global potential, equivalent to 11,898 $MtCO_2$ or 396.6 $MtCO_2$ per year), followed by North America (21.0%), and Africa (20.7%) (**Figure 12,** bottom).

[k] In simple terms, cost-effective potential can be understood as the amount of mitigation that can be reasonably expected to be unlocked given economic constraints. Following the cost-effective definition outlined by Roe et al. (2021), the threshold of USD 100/$tCO_2eq$ was set by using "the middle of the range for carbon prices in 2030 for a 1.5°C pathway, and at the low end of the range in 2050."

**Figure 12. Cost-effective mitigation potential over the 2020-2050 period, in $MtCO_2e$ by hectare (top figure), and in $GtCO_2e$ by region (bottom figure)**

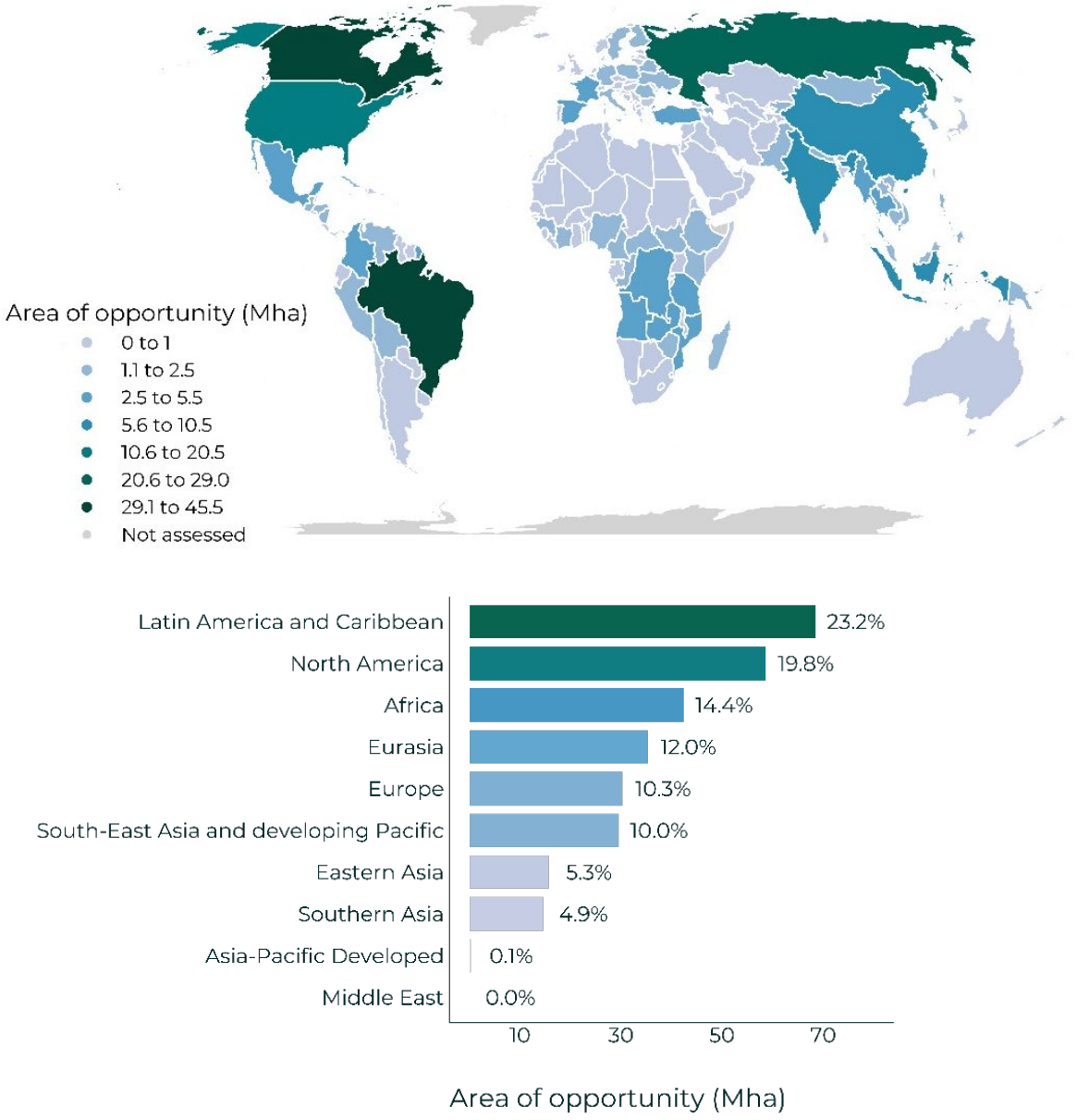



Source: Data extracted from Roe et al. (2021)

The global cost-effective area of opportunity for 2020-2050 is 295.1 Mha (**Figure 13**, top), which is approximately equivalent to the area of India. The majority (80%) of the mitigation potential is concentrated in only twenty-four countries. Brazil stands out, accounting for 22.7 percent of the global mitigation potential (8.232 billion $tCO_2$ over the thirty-year period, or 274 million $tCO_2$ per year; 45.5 Mha of restoration area of opportunity) and together with the United States, which represents 12.6 percent (4.572 billion $tCO_2$ or 152 million $tCO_2$ per year; 20.4 Mha), adds up to 35 per cent of the global figure. Other key countries are Canada (8.4% of the global total), Indonesia (5.0%), India (3.2%), and DRC (2.9%).

Differences across and within regions are substantial. In alignment with mitigation opportunity, Latin America and the Caribbean have the largest area of opportunity (**Figure 13**, top), accounting for 23.2 percent of the global area with potential for afforestation, reforestation, and natural forest regrowth (equivalent to 68.5 Mha). North America (19.8% or 58.6 Mha) and Africa (14.4% or 42.4 Mha) follow. Eurasia and Europe account for 22.2 percent of the area of opportunity, but host only 4.6 percent of the mitigation potential.

**Figure 13. Cost-effective area of opportunity (2020-2050), in million hectares**




Source: Data extracted from Roe et al. (2021)

When accounting for both area of opportunity and mitigation opportunity, the best opportunities overall lie in the United States of America (233.8 $tCO_2$ per ha), Brazil (181.0 $tCO_2$ per ha), Indonesia (171.0 $tCO_2$ per ha), DRC (215.3 $tCO_2$ per ha), Angola (208.8 $tCO_2$ per ha), or Tanzania (214.7 $tCO_2$ per ha).

A full list of countries with their mitigation potential, area of opportunity, and mitigation density can be found in Annex F.

# Endnotes


1. IPCC. (2018). Summary for Policymakers. In *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*. https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SPM_version_report_LR.pdf.

2. IPCC. (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Geneva, Switzerland: IPCC.; Intergovernmental Panel on Climate Change (IPCC). (2019). *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*. https://www.ipcc.ch/site/assets/uploads/sites/4/2020/02/SPM_Updated-Jan20.pdf.

3. Harris, N. L., Gibbs, D. A., Baccini, A., Birdsey, R. A., de Bruin, S., Farina, M., et al. (2021). Global maps of twenty-first century forest carbon fluxes. *Nature Climate Change*, *11*(3), 234–240. https://doi.org/10.1038/s41558-020-00976-6.

4. Gatti, L. V., Basso, L. S., Miller, J. B., Gloor, M., Gatti Domingues, L., Cassol, H. L., et al. (2021). Amazonia as a carbon source linked to deforestation and climate change. *Nature*, *595*(7867), 388–393. https://pubmed.ncbi.nlm.nih.gov/34262208/

5. Wilson, S. J., Schelhas, J., Grau, R., Nanni, A. S., & Sloan, S. (2017). Forest ecosystem-service transitions: the ecological dimensions of the forest transition. *Ecology and Society*, *22*(4), art38. https://doi.org/10.5751/ES-09615-220438.

6. IPCC. (2022). Summary for Policymakers. In [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)] (Ed.), Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf.

7. Chao, S. (2012). *Forest Peoples: Numbers across the world*. https://www.forestpeoples.org/sites/fpp/files/publication/2012/05/forest-peoples-numbers-across-world-final_0.pdf; World Resources Institute & Climate Focus. (2022). *Sink or swim: How Indigenous and community lands can make or break nationally determined contributions*. https://forestdeclaration.org/resources/sink-or-swim/; Gibson, L., Lee, T. M., Koh, L. P., Brook, B. W., Gardner, T. A., Barlow, J., et al. (2011). Primary forests are irreplaceable for sustaining tropical biodiversity. *Nature*, *478*(7369), 378–381. https://doi.org/10.1038/nature10425.

8. Silveira, F. A. O., Ordóñez-Parra, C. A., Moura, L. C., Schmidt, I. B., Andersen, A. N., Bond, W., et al. (2022). Biome Awareness Disparity is BAD for tropical ecosystem conservation and restoration. *Journal of Applied Ecology*, *59*(8), 1967–1975. https://doi.org/10.1111/1365-2664.14060.

9. Hansen, M. C., Potapov, P. V., Moore, R., Hancher, M., Turubanova, S. A., Tyukavina, A., et al. (2013). High-Resolution Global Maps of 21st-Century Forest Cover Change. *Science*, *342*(6160), 850–853. https://doi.org/10.1126/science.1244693; Global Forest Watch. (2022). https://www.globalforestwatch.org.

10. Curtis, P. G., Slay, C. M., Harris, N. L., Tyukavina, A., & Hansen, M. C. (2018). Classifying drivers of global forest loss. *Science*, *361*(6407), 1108–1111. https://doi.org/10.1126/science.aau3445; Turubanova, S., Potapov, P. V., Tyukavina, A., & Hansen, M. C. (2018). Ongoing primary forest loss in Brazil, Democratic Republic of the Congo, and Indonesia. *Environmental Research Letters*, *13*(7), 074028. https://doi.org/10.1088/1748-9326/aacd1c.

11. Turubanova, S. et al. (2018).

12. Weisse, M., & Potapov, P. (2021, April 28). Assessing Trends in Tree Cover Loss Over 20 Years of Data [Global Forest Watch]. https://www.globalforestwatch.org/blog/data-and-research/tree-cover-loss-satellite-data-trend-analysis/.

13. Weisse, M., & Potapov, P. (2021, April 28).

14. World Cocoa Foundation. (2022). Cocoa & Forests Initiative. https://www.worldcocoafoundation.org/initiative/cocoa-forests-initiative/; NYDF Assessment Partners. (2020). *Balancing forests and development. Addressing infrastructure and extractive industries, promoting sustainable livelihoods*. https://forestdeclaration.org/resources/2020NYDFReport.pdf; NYDF Assessment Partners. (2021). *Taking stock of national climate action for forests*. https://forestdeclaration.org/resources/taking-stock-of-national-climate-action-for-forests/.

15. Noon, M. L., Goldstein, A., Ledezma, J. C., Roehrdanz, P. R., Cook-Patton, S. C., Spawn-Lee, S. A., et al. (2022). Mapping the irrecoverable carbon in Earth's ecosystems. *Nature Sustainability*, *5*(1), 37–46. https://doi.org/10.1038/s41893-021-00803-6;

Goldman, L., & Weisse, M. (2022, April 28). Global Forest Watch's 2021 Data Update Explained. October 18, 2022, https://www.globalforestwatch.org/blog/data-and-research/2021-tree-cover-loss-data-explained.

16. Weisse, M., & Potapov, P. (2021, April 28).

17. Weisse, M., & Potapov, P. (2021, April 28).

18. Weisse, M., & Goldman, L. (2022, April 28). What Happened to Forests in 2021? | Global Forest Watch Blog. September 19, 2022, https://research.wri.org/gfr/latest-analysis-deforestation-trends.

19. Heilmayr, R., & Benedict, J. (2022, September 14). Indonesia makes progress towards zero palm oil deforestation. September 19, 2022, https://insights.trase.earth/insights/indonesia-makes-progress-towards-zero-palm-oil-deforestation/.

20. Ministry of Environment and Forestry, Indonesia. (2022). *Operational Plan, Indonesia's FOLU Net Sink 2030* (No. 168/Menlhk/PKTL/PLA.1/2/2022). https://www.menlhk.go.id/uploads/site/post/1647334063.pdf.

21. Nusantara Atlas. (2022, March 29). Indonesian deforestation and plantation expansion slow. September 19, 2022, https://nusantara-atlas.org/indonesian-deforestation-and-plantation-expansion-slow/.

22. Weisse, M., & Potapov, P. (2021, April 28).

23. Weisse, M., & Potapov, P. (2021, April 28).

24. Weisse, M., & Potapov, P. (2021, April 28).

25. World Bank. (n.d.). Gabon | Data. October 12, 2022, https://data.worldbank.org/country/gabon.

26. BBC News. (2021, June 22). Gabon is first African country paid to protect its rainforest. *BBC News*. https://www.bbc.com/news/world-africa-57567829.

27. Roundtable on Sustainable Palm Oil. (2020). *Gabon National Interpretation of the RSPO Principles and Criteria for the Production of Sustainable Palm Oil 2018*. https://www.rspo.org/library/lib_files/preview/1383; Roundtable on Sustainable Palm Oil. (2020, September 30). RSPO BoG endorses Côte d'Ivoire and Gabon National Interpretations of RSPO P&C. https://rspo.org/news-and-events/announcements/rspo-bog-endorses-cote-divoire-and-gabon-nationai-interpretations-of-rspo-pandc.

28. World Wildlife Fund (WWF). (2018, October 3). WWF salue la décision du gouvernement gabonais d'exiger la certification FSC pour toutes les concessions forestières d'ici 2022. https://wwf.panda.org/wwf_news/?336470/WWF-salue-la-decision-du-gouvernement-gabonais-dexiger-la-certification-FSC-pour-toutes-les-concessions-forestieres-dici-2022.

29. République Gabonaise. (2012). *Plan Stratégique Gabon Emergent: Vision 2025 et orientations stratégiques 2011 - 2016*. https://www.cafi.org/sites/default/files/202102/Gabon_2015_SM%20A_PlanStrategiqueGabonEmergent.pdf

30. Grantham, H. S., Duncan, A., Evans, T. D., Jones, K. R., Beyer, H. L., Schuster, R., et al. (2020). Anthropogenic modification of forests means only 40% of remaining forests have high ecosystem integrity. *Nature Communications*, *11*(1), 5978. https://doi.org/10.1038/s41467-020-19493-3.

31. Potapov, P., Hansen, M. C., Pickens, A., Hernandez-Serna, A., Tyukavina, A., Turubanova, S., et al. (2022). The Global 2000-2020 Land Cover and Land Use Change Dataset Derived From the Landsat Archive: First Results. *Frontiers in Remote Sensing*, *3*, 856903. https://doi.org/10.3389/frsen.2022.856903.; Reytar, K., Levin, D., Goldman, E., Stolle, F., & Weisse, M. (2022, June 28). 36 Countries Are Gaining More Trees than They're Losing [World Resources Institute]. https://www.wri.org/insights/tracking-global-tree-cover-gain.

32. Reytar, K. et al. (2022, June 28).

33. Area of plantations were calculated using data from Harris, N.L., E.D. Goldman, and S. Gibbes. 2019. "Spatial Database of Planted Trees Version 1.0." Technical Note. Washington, DC: World Resources Institute.

34. Potapov, P. et al. (2022).

35. Potapov, P. et al. (2022).

# Acknowledgments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Susan Cook-Patton, Robin Chazdon, Sara Minoli, Ivan Palmegiani, Stephanie Roe, Leland Werden, and Charlotte Wheeler

We would also like to thank the following people for their valuable insights and review:

Craig Beatty, Barbara Bendandi, Frederik Buchholz, Helen Burley, Molly Cross, Laura D'Arcy, Sarah Draper, Melaina Dyck, Akiva Fishman, Dorian Fougeres, Franziska Haupt, Martin Herold, Swati Hingorani, Hermine Kleymann, Erin D. Matson, Pablo Pacheco, Hugo Rosa da Conceicao, Anna Rynearson, Emma Thomson, Jean Timmers, Brittany Williams, Sarah Wilson, and Marta Zeymo

## DESIGN AND FIGURES

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## CITATION

Please use the following citation when referencing the findings presented in this brief:

> Forest Declaration Assessment Partners. (2022). Overarching forest goals: Theme 1 assessment. *Forest Declaration Assessment: Are we on track for 2030?* Climate Focus (coordinator and editor). Accessible at www.forestdeclaration.org.

# Annex A. Key terms

### COST-EFFECTIVE RESTORATION

Interventions are considered cost-effective if the cost of mitigating one tonne of CO2 equivalent is up to USD 100. The threshold of USD 100/tCO2eq was set by using "the middle of the range for carbon prices in 2030 for a 1.5°C pathway, and at the low end of the range in 2050" (Roe et al., 2021, p. 6027).

### DEFORESTATION

A tree cover loss event that is: permanent in nature, e.g., when forest is converted to cropland or cleared for development; or when it occurs within humid tropical primary forest boundaries.

### FOREST LANDSCAPE INTEGRITY INDEX

The Forest Landscape Integrity Index (FLII) tracks the ecological integrity of forests using data on the intensity and distribution of human pressures known to cause degradation, combined with observed losses in forest connectivity.

### FOREST LANDSCAPE RESTORATION (FLR)

The long-term process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscape.

### FOREST PROTECTION

A suite of interventions aimed at halting and reversing deforestation by 2030, in line with the Paris Agreement and Glasgow Leaders' Declaration. Forest protection includes reducing deforestation and forest degradation, restoring degraded forestlands, and sustainable management of production forests, with involvement of governments, the private sector, IPs and LCs, and other actors.

### FOREST RESTORATION AREA

Area shifting from a non-forest cover state to a forest cover one through afforestation and reforestation activities. The restoration area in this report, therefore, does not include the restoration of degraded forests or interventions in other ecosystems.

### GROSS ZERO DEFORESTATION

The Glasgow Leaders' Declaration on Forests and Land Use calls to "… halt and reverse forest loss and land degradation by 2030" but does not specify whether the goal should be to reach gross or net zero by the end of the decade. The 2021-2030 benchmark presented in this year's report for the different indicators uses the "gross zero" interpretation. Indicators tracking a less ambitious "net zero" pathway will be developed in future assessments as data becomes available (e.g., by using the gross forest loss and gain of the upcoming 2025 FAO Forest Resource Assessment).

### TREE COVER LOSS

A loss event that may or not be permanent. Non-permanent tree cover loss routinely occurs in the context of logging, fire, or swidden agriculture. Tree cover loss data is often analyzed as a first step to measure deforestation.

# Annex B. Methodology

## 1. Forest loss Indicators

The new FDA's reporting framework (Annex D) analyses forest loss and degradation indicators in two different ways. First, the 2021 data are compared to a 2018-2020 baseline, in order to assess whether there has been a short-term improvement or worsening of any given indicator. The baseline of 2018-20 was chosen to smooth out any single-year anomalies. Second, the 2021 data is benchmarked against a future pathway that delivers the 2030 objectives (e.g., reaching zero deforestation by 2030).

While multiple reduction pathways are in principle possible, for all deforestation, tropical primary forest loss, and forest degradation indicators, a straightforward and transparent linear reduction pathway is established. Each year of the decade (including 2021) requires a 10 percent reduction in loss relative to the baseline to reach zero gross loss by 2030. This is consistent with previous NYDF progress assessments, which also tracked progress against a linear reduction pathway.

The tree cover loss underlying deforestation and tropical primary forest loss was calculated using a >30 percent tree cover density threshold. Improvements in the detection of tree cover loss due to the incorporation of new satellite data and methodology changes between 2011 and 2015 may result in higher estimates of loss in recent years compared to earlier years (Weisse and Potapov 2021) but does not affect the comparison of 2021 data to the 2018-2020 baseline.

### Deforestation

Deforestation (ha/yr) is estimated as the part of global tree cover loss (Hansen et al. 2013) that leads to a permanent conversion of forest to a new land use according to a map of the drivers of tree cover loss (Curtis et al., 2018). This includes all tree cover losses that are likely attributed to the production of agricultural commodities and urbanization (Curtis et al., 2018) as well as tree cover loss due to shifting agriculture in humid tropical primary forests (primary forests as mapped by Turubanova et al. 2018). **Table 1** outlines the 30 countries with the highest deforestation in 2021.

### Humid tropical primary forest loss

Humid tropical primary forest loss (ha/yr) measures the tree cover loss occurring as of 2001 within humid tropical primary forests, which are defined as mature natural humid tropical forest cover that has not been completely cleared and regrown in recent history (Turubanova et al., 2018). No corresponding map of primary forest is available globally; hence, this indicator is limited to the humid tropics.

### Gross GHG emissions from forests

GHG emissions from global deforestation (measured in megatons of carbon dioxide equivalent per year, or $MtCO_2e/yr$) are estimated by combining data on carbon stocks and tree cover loss (Harris et al., 2021, updated with tree cover loss through 2021). Our estimates of gross GHG emissions include aboveground carbon, belowground carbon, deadwood and litter carbon, as well as soil organic carbon. $CO_2$, $CH_4$, and $N_2O$ emissions from peat drainage and forest fires are also included. Emissions are attributed to deforestation using Curtis et al. (2018) (updated through 2021) following the same categories used for the global deforestation indicator.

Gross GHG emissions from humid tropical primary forest loss (tCO2e/yr) are estimated by overlaying gross emissions from Harris et al. 2021 with humid tropical primary forest extent in 2001 (Turubanova et al., 2018).

**Table 1. Countries with the highest absolute levels of deforestation (in million hectares, Mha) and the relative and absolute change from 2018-2020 baseline to 2021 level**

| | | DEFORESTATION | | | |
|---|---|---|---|---|---|
| | | 2018-2020 baseline (Mha) | 2021 (Mha) | Absolute change from baselne (Mha) | Relative change from baseline |
| **1** | **Brazil** | **2.25** | **2.33** | **0.076** | **3%** |
| **2** | **Indonesia** | **1.04** | **0.78** | **-0.260** | **-25%** |
| **3** | **Bolivia** | **0.50** | **0.53** | **0.030** | **6%** |
| **4** | **Democratic Republic of the Congo** | 0.48 | 0.50 | 0.016 | 3% |
| **5** | **Paraguay** | 0.26 | 0.26 | 0.003 | 1% |
| **6** | **Malaysia** | 0.34 | 0.26 | -0.080 | -24% |
| **7** | **Lao PDR** | 0.24 | 0.23 | -0.015 | -6% |
| **8** | **Myanmar** | 0.18 | 0.18 | 0.003 | 2% |
| **9** | **Peru** | 0.18 | 0.17 | -0.012 | -7% |
| **10** | **Colombia** | 0.19 | 0.16 | -0.031 | -17% |
| **11** | **Argentina** | 0.13 | 0.16 | 0.022 | 17% |
| **12** | **Vietnam** | 0.17 | 0.14 | -0.026 | -15% |
| **13** | **Cambodia** | 0.13 | 0.14 | 0.009 | 7% |
| **14** | **United States** | 0.12 | 0.10 | -0.020 | -16% |
| **15** | **Cameroon** | 0.07 | 0.089 | 0.018 | 25% |
| **16** | **Thailand** | 0.09 | 0.087 | -0.002 | -2% |
| **17** | **Mexico** | 0.11 | 0.068 | -0.038 | -36% |
| **18** | **Nicaragua** | 0.05 | 0.064 | 0.017 | 37% |
| **19** | **Madagascar** | 0.08 | 0.049 | -0.027 | -35% |
| **20** | **Philippines** | 0.06 | 0.045 | -0.015 | -25% |

| | | DEFORESTATION | | | |
|---|---|---|---|---|---|
| **21** | **Papua New Guinea** | 0.06 | 0.043 | -0.015 | -26% |
| **22** | **Honduras** | 0.04 | 0.042 | 0.000 | -1% |
| **23** | **Venezuela** | 0.07 | 0.031 | -0.036 | -54% |
| **24** | **Liberia** | 0.03 | 0.025 | -0.003 | -12% |
| **25** | **Angola** | 0.01 | 0.024 | 0.014 | 131% |
| **26** | **Nigeria** | 0.03 | 0.022 | -0.003 | -10% |
| **27** | **Guatemala** | 0.04 | 0.020 | -0.019 | -48% |
| **28** | **Republic of the Congo** | 0.03 | 0.019 | -0.008 | -30% |
| **29** | **Central African Republic** | 0.01 | 0.019 | 0.008 | 71% |
| **30** | **Canada** | 0.01 | 0.016 | 0.005 | 51% |

Source: Based on original analysis for this report using data from Hansen et al. 2013, Curtis et al. 2018, and Turubanova et al. 2018.

### Degradation

The Forest Landscape Integrity Index (FLII) provides an index of the overall level of degradation (i.e., human modification) for all forests across a continuous scale from the lowest (FLII = 0) the highest (FLII = 10) level of integrity (Grantham et al., 2020) annually from 2017. The Glasgow Leaders' Declaration calls for a halt to land degradation (including forest degradation), implicitly by 2030. Therefore, the 2030 target is set at zero further degradation (i.e., no further loss in FLII). Analogous to other indicators, the pathway to reach this 2030 target reflects a 10 percent decline each year from the baseline rate, which is the average annual loss of FLII units across 2018-2020.[a] The FLII uses proxies for degradation, combining observable pressures within pixels (agriculture, forest cover loss and infrastructure), inferred pressures (e.g., edge effects, overharvest), and losses in forest connectivity in the surrounding landscape to give an aggregate score.

## 2. Restoration indicators

### Rate of forest cover and tree cover gain

[a] Given that many Forest Landscape Restoration pledges exist a less conservative benchmark could be applied (See section Annex C). Future assessments may revise this benchmark upwards as certainty regarding methodological developments allow.

Global data on forest cover and tree cover gain using remote sensing technology are still under development. Recent technological advancements in satellite sensors offer new possibilities for measuring tree height, which improve accuracy for estimating tree gain (and loss) globally. For instance, in late 2021, the University of Maryland and the World Resources Institute (WRI) leveraged data provided by the Global Ecosystem Dynamics Investigation Lidar (GEDI) onboard the International Space Station (ISS) to produce new prototype data on forest cover gain for the period 2000-20.[1]

While these methods have improved understanding of the changing dynamics of global forests, the data they generate does not perfectly align with the indicators employed in this Assessment to measure the rate of forest cover and tree cover gain. The dataset reveals areas where tree cover has increased, but it does not indicate if the gain in tree cover resulted from forest restoration or afforestation versus other factors, such as regeneration after natural disturbances or land abandonment. The data set reports the accumulated gain that occurred between 2000 and 2020 as a single time step. Forthcoming data from University of Maryland and WRI, expected by late 2023, will improve upon this first prototype to include a time series of annual estimates, which will enable a more thorough understanding of the temporal dynamics of tree cover gain. Furthermore, the BIOMASS mission from the European Space Agency (ESA) is expected to start delivering high resolution data on above ground biomass in the first quarter of 2023.

### Cost-effective potential for restoration

This assessment indicates how much can be realistically restored between 2020 and 2050, measuring the potential to shift from a non-forest cover state to a forest cover state through afforestation and reforestation activities and through natural forest regrowth. The restoration potential data is available in terms of mitigation potential (measured in $MtCO_2$), the mitigation density (Mt $CO_2$per hectare (ha)),[2] and the area of forest restoration opportunity (measured in ha).[3] These indicators can be interpreted as a proxy for forest restoration opportunity potential, while keeping in mind the challenges in representing the broad scope of restoration or FLR with any single metric.

Available literature provides estimates of restoration potential both in technical and cost-effective terms.[b] The former refers to the mitigation potential achievable with available technologies, regardless of the cost of implementation. The latter considers the implementation of mitigation activities that are feasible under the price threshold of USD 100/$tCO2_e$[c]. As noted by Roe et al. (2021), the technical potential might not be feasible or desirable due to economic, social, political, or environmental constraints and tradeoffs. Hence, cost-effective potential estimates are considered a more realistic and actionable target for policy,[d] and are the focus of the Forest Declaration Assessment's analysis.

The dataset is based on the cost-effective sectorial estimates from the paper Roe et al. (2021) covering the period 2020 to 2050. Roe et al. (2021) adapted existing mitigation potential estimates from afforestation, reforestation, and natural forest regrowth from two existing papers:

i) Busch et al. (2019):[4]

[b] Interventions are considered cost-effective if the cost of mitigating one $tCO_2e$ is at least USD 100. The threshold of USD 100/tCO2eq was set by using 'the middle of the range for carbon prices in 2030 for a 1.5C pathway, and at the low end of the range in 2050' (Roe et al., 2021, p. 6027).

[c] In simple terms, cost-effective potential can be understood as the amount of mitigation that can be reasonably expected to be unlocked given economic constraints. Following the cost-effective definition outlined by Roe et al. (2021), the threshold of \$100/$tCO_2$eq was set by using 'the middle of the range for carbon prices in 2030 for a 1.5C pathway, and at the low end of the range in 2050'.

[d] Please see Annex E for further information on the methodology and an in-depth explanation of how conservativeness has been additionally enhanced by applying an algorithm that ensures consistency between various pieces of research.

They "produce spatially disaggregated marginal abatement cost curves for tropical reforestation by simulating the effects of payments for increased CO2 removals on land-cover change in 90 countries" (p. 463). The study defines reforestation as the transition of land from non-forested to forested at 30% tree cover. This definition includes afforestation, although they did not use the term to avoid promoting conversion of native non-forest ecosystems. Busch et al. did not distinguish between anthropogenic versus natural reforestation processes in their data. Other biomes such as deserts and mangroves are excluded from the analysis.

Busch et al. (2019) first model the historical reforestation area (2000 – 2010) as a function of economic and biophysical driver variables. These include agricultural revenues, slope and elevation, distance from the nearest city of more than 750,000 inhabitants, the extent of protected areas, and biome type. Second, they project reforestation area per decade from 2010 to 2050 and convert projections into $CO_2$ removals in above and below-ground biomass based on the type of biome and whether reforestation is through natural regrowth or forest plantations. Finally, Busch et al. (2019) produce marginal abatement cost curves by applying a per-hectare carbon price effect to the model, which simulates payments for carbon removals.

The analysis accounts for non-linear trends in land-cover change (for instance, the inverted-U-shape relationship between reforestation and deforestation), assumes a 10 percent discount rate and does not include long-lived wood products.

ii) Austin et al. (2020)[5]

They use a Global Timber Model (GTM) to project the mitigation potential of avoided deforestation, forest management activities, increasing harvest rotations, and afforestation/reforestation in response to carbon price signals across 16 regions. Afforestation/reforestation interventions include natural forest regrowth and the establishment of managed timber plantations.

The GTM is a dynamic economic optimization model representing the forestry sector. It determines optimal levels of afforestation/reforestation (together with other interventions) by maximizing net welfare (i.e., producers' and consumer's surplus) and assuming future macroeconomic and environmental conditions.

The model differentiates forest types and associated biomes, accessibility to the area and management intensity. Austin et al. (2020) first establishes a baseline scenario representing the extent of future forest and land management, and associated $CO_2$ fluxes in above- and below-ground biomass and soil carbon, in the absence of carbon price. Second, they develop scenarios under alternative carbon price scenarios and compared these projections to the baseline scenario to estimate net mitigation potential. The model assumes a 5% discount rate.

Roe et al. (2021) averages the cost-effective mitigation potential (with the threshold set to \$100/$tCO_2e$) from both papers, when available, or considers the only available estimate when others are missing. These papers are held in highest regard for the provision of reliable mitigation potential estimates since they include spatial opportunity, costs, and are based on well-grounded econometric analyses. Additionally, by averaging the two most updated estimates, Roe et al. (2021) account for the factors considered in the two separate studies, and it is therefore expected to deliver very robust estimates.

Roe et al. (2021) calculates the cost-effective area of opportunity by measuring the land area associated with a given mitigation potential. Thus, the indicator on mitigation density equals the mitigation potential of each country divided by the respective area of opportunity.

The resulting dataset provides one or more indicators of restoration potential for 224 countries. Furthermore, Roe et al. (2021) provides annual estimates for both mitigation potential and area of opportunity, which are multiplied by 30 years to obtain the overall estimate for the period 2020-50. This adjustment allows for comparability between these indicators and the commitments database (see Annex E).

[1] Potapov, P., Hansen, M. C., Pickens, A., Hernandez-Serna, A., Tyukavina, A., Turubanova, S., et al. (2022). The Global 2000-2020 Land Cover and Land Use Change Dataset Derived From the Landsat Archive: First Results. *Frontiers in Remote Sensing*, *3*, 856903. https://doi.org/10.3389/frsen.2022.856903.

[2] Roe, S., Streck, C., Beach, R., Busch, J., Chapman, M., Daioglou, V., et al. (2021). Land-based measures to mitigate climate change: Potential and feasibility by country. *Global Change Biology*, *27*(23), 6025–6058. https://doi.org/10.1111/gcb.15873.

[3] World Resources Institute. (2014, May 30). Atlas of Forest and Landscape Restoration Opportunities. https://www.wri.org/data/atlas-forest-and-landscape-restoration-opportunities.

[4] Busch, J., Engelmann, J., Cook-Patton, S. C., Griscom, B. W., Kroeger, T., Possingham, H., et al. (2019). Potential for low-cost carbon dioxide removal through tropical reforestation. *Nature Climate Change*, *9*(6), 463–466. https://doi.org/10.1038/s41558-019-0485-x.

[5] Austin, K. G., Baker, J. S., Sohngen, B. L., Wade, C. M., Daigneault, A., Ohrel, S. B., et al. (2020). The economic costs of planting, preserving, and managing the world's forests to mitigate climate change. *Nature Communications*, *11*(1), 5946. https://doi.org/10.1038/s41467-020-19578-z.

# Sustainable production and development

## Theme 2 Assessment

THEME 2

**SUSTAINABLE PRODUCTION AND DEVELOPMENT**

Theme 2 of the Forest Declaration Assessment explores the economic sectors and activities that contribute to and drive deforestation and forest degradation, including agriculture, extractive industries, infrastructure, and other aspects of economic development. This report builds on previous NYDF Progress Assessment reports on Goal 2 (agricultural commodities), Goal 3 (extractive industries and infrastructure), and Goal 4 (sustainable livelihoods). This review aligns with corporate targets to end deforestation from agricultural commodity production by 2025, a crucial milestone for limiting temperature rise to below 1.5°C.

# Key Messages

**With only eight years left to achieve the 2030 forest goals and three years left to achieve private sector targets to eliminate deforestation from agricultural supply chains by 2025, the most recent global deforestation rates show that we are not on track.** Efforts to end deforestation from commodity production have achieved important but insufficient reductions. Commodity-driven tree cover loss declined by 6 percent in 2021 compared to previous years (2018-20), but deforestation rates are still higher than in any year before 2016 and are far from the trajectory (20% reduction per year) needed to reach the 2025 target. Available evidence demonstrates that global economic development is not yet on a sustainable pathway. The pace and scale of public and private action must be rapidly accelerated to meet the 2025 and 2030 forest goals.

### Governments:

Almost all national governments have adopted ambitious forest goals under the Sustainable Development Agenda 2030, indicating broad alignment with the aim of achieving sustainable production and development. Dozens of developing countries have forest strategies in the context of REDD+,[a] laying the groundwork for important reforms and in some cases also driving important policy changes. In most cases, however, these programs have not yet yielded a reduction in deforestation, and only a handful of countries have received payments for forest emission reductions.

In most countries, governments have yet to make the bold sectoral reforms needed to incentivize the sustainable use and protection of forests and to disincentivize their destruction.[1] There is limited transparency on how policymakers integrate forest goals into their decision making and how they seek to avoid and mitigate forest risks across economic sectors. Land use policies – such as fiscal incentives, environmental and social impact assessments, and protected area regulations – often fail to integrate forest concerns, have loopholes in their design, or are weakly enforced. Even governments that have adopted "green growth" agendas still struggle to invest in economic growth that is aligned with forest goals.

Poverty reduction is often a primary aim of economic development approaches and can also lead to reduced deforestation and forest degradation, with the right enabling conditions and targeted incentives. Interventions such as community forestry, payments for environmental services schemes, or extension services for farmers can address both problems simultaneously. However, there are very few examples of government-led poverty reduction programs that both prioritize forest impacts and have been implemented at scale. One analysis of 23 countries found that most had community or collective forestry schemes in place, but only a few provided robust land tenure or promoted economic development.[2]

### Companies:

Despite real efforts and advances by some industry-leading companies, the agriculture sector has not made sufficient progress in reducing deforestation from agricultural commodity production. Since the first NYDF Progress Assessment report in 2016, there has been little progress removing deforestation from supply chains (NYDF Goal 2), and the transformative potential of voluntary company action has not yet been realized. To date, only a quarter of major global companies in the sector have announced a clear, comprehensive, and ambitious policy to eliminate deforestation from their supply chains – and of those that have, only a few have

[a] REDD+: reducing emissions from deforestation and forest degradation, and fostering conservation, sustainable management of forests, and enhancement of forest carbon stocks

made significant progress on implementation. Less than 20 percent of companies disclosing to CDP report near complete compliance with their zero deforestation commitments.

Corporate action and transparency related to forests also remains limited in the extractives sector. In response to investor demand, most mining companies have now adopted some form of corporate social responsibility or environmental, social, and governance approach, but these frameworks rarely include an explicit focus on forests. Progress among leading companies on indicators of "responsible mining" has slowed since 2020 compared to 2018-20. Few companies have adopted voluntary mining sector sustainability standards that require them to address direct, indirect, and cumulative forest impacts. The mining sector recently made positive strides by adopting policies and standards that address biodiversity impacts, but overall, transparency and actions to address forest impacts still lag significantly behind the agriculture sector.

**Grassroots actors:**

Indigenous Peoples and local communities (IPs and LCs) are at the forefront of grassroots environmentalism, despite the significant risks they face. IPs and LCs often work together with civil society organizations, smallholder farmer coalitions, and women's networks to combat threats to forests from development projects, extractives, or agricultural expansion. These actors employ various forms of social resistance, but with limited success – only 1 in 10 cases of bottom-up mobilization against environmentally destructive and socially conflictive projects are successful in stopping their target project. These successes come at a cost: 200 land and environmental defenders were killed in 2021, and the mining and extractives sector is consistently ranked as one of the deadliest for defenders.[3]

# Recommendations

**To ensure that 2025 and 2030 do not pass as 2020 did – with limited progress toward global forest goals – governments, companies, and civil society must collaborate to accelerate forest action, supported by transparency and accountability.**

The Forest Declaration Assessment Partners urge the endorsers of the Glasgow Leaders' Declaration, as well as other pledgers, to ensure full transparency on the implementation of pledges, so that progress can be tracked and pledgers held accountable. Pledgers must all set clear interim milestones and provide publicly accessible reporting.

Public, private, and grassroots actors must prioritize collaboration to leverage relative roles and strengths to meet the 2025 target for commodity-driven deforestation. Where certain geographies and supply chains have achieved reductions, the credit can usually be shared between government mandates, company action, and civil society and grassroots initiatives. All actors should accelerate implementation of multifunctional landscape and jurisdictional programs that take an integrative, inclusive, and collaborative approach to addressing forest risks and impacts while driving sustainable economic growth.

**Governments:**

Governments must carefully consider whether voluntary action is a viable foundation to achieve the 2030 forest goals, and how the role of mandatory action, disclosure, and accountability should be increased. Despite the exceptional successes of a few privately led initiatives – notably the Amazon Soy Moratorium, which has led to lasting and substantial deforestation reductions – voluntary actions alone have not sufficiently shifted the trajectory of forest loss.

- To meet their own voluntary pledges and targets, governments should adopt and enforce stronger mandates for forest protection and sustainable management. Interventions could include binding due diligence regulations and mandatory disclosure, moratoria, increased regulation of protected areas, and recognition and respect for Indigenous territories including mandatory Free, Prior and Informed Consent (FPIC). These mandates should be robust and science-based, covering all forest-risk commodities, legal and illegal deforestation, and addressing human rights and IPs and LCs' rights.
- The critical role of global commodity trading companies, which source and trade a disproportionate volume of forest-risk commodities, must be recognized and leveraged to achieve concrete progress at scale. Governments should implement regulations and legislation targeting these actors, complemented by clear conditions for and from financial institutions.
- Governments should apply a forest lens to interventions designed to increase prosperity and reduce poverty; "greening" poverty interventions can increase their effectiveness by maintaining and improving the contribution of forest ecosystem services to rural livelihoods.
- Across the extractive, infrastructure, and agricultural sectors, regulations should mandate that forest risks identified for any development project must be managed by applying the mitigation hierarchy, with the first step – avoidance – applied as much as possible, accounting for other priorities for sustainable development. Governments should also enforce strict "no-go" zones for extractive industries and infrastructure in high value forest ecosystems.
- For extractive industries, governments should also strengthen the regulatory processes for prospecting, exploration, and licensing mining activities. Environmental and social impact assessments should be required to be conducted early in the mining life cycle and to assess indirect and cumulative project impacts.

- Across all sectors, governments must empower civil society, smallholders, and, in particular, IPs and LCs, who have traditionally been the strongest constituencies for forests. Governments need to ensure meaningful participation in decision-making, design, and implementation processes by affected rights-holders, including ensuring the right to FPIC. Affected rights-holders include those whose customary forest lands and livelihoods are affected and organizations who advocate for the rights of nature.

**Companies:**

Companies need to urgently increase the scope and stringency of corporate action, whether voluntary or mandated. Companies who wish to lead the charge toward the 2025 and 2030 forest goals should advocate at local, national, and international levels for holistic approaches to addressing deforestation; approaches where corporate action is enabled and supported by appropriate legislative and policy frameworks, trade standards, and financial instruments and incentive structures.[4]

- Agricultural companies should strive to follow the best available guidance for removing deforestation from their supply chains, such as that provided by the Accountability Framework, and should adopt best practices set by sustainability standards.
- Sectoral bodies like trade and commodity associations should expand their efforts to include domestic markets and small- and medium enterprises into the zero-deforestation and zero-conversion supply chain movement to reach a critical share of market coverage for all forest-risk commodities.
- Extractive companies, and those sourcing from them, should adopt biodiversity commitments and policies that explicitly state that forest impacts from company operations at and beyond the mine site, and company-wide, must be addressed using the mitigation hierarchy. They must then embed the necessary processes and mechanisms in their standard operations to realize these commitments, including monitoring and reporting systems.
- Mining sector sustainability schemes should require site operators and downstream purchasers to assess and manage not just the direct forest impacts of extraction, but the indirect and cumulative as well.
- Companies in the extractives supply chain should also consider the opportunities of conducting forest conservation and restoration activities, through a nature-based solutions lens, to mitigate business risks, achieve company climate and biodiversity targets, and provide benefits to affected stakeholders in line with Forest-Smart Mining guidance.

# Introduction

## 1. Why look at sustainable production and development?[b]

Global demand for soft commodities like food and timber, and for mined commodities like fossil fuels and mined materials, continues to drive expansion of agriculture, extractive industries, and other land uses into forests. The world economy relies on this unconstrained flow of commodities – extracted in many cases from forested land in developing and emerging economies – to fuel global and domestic supply chains. International export demand for agricultural and forestry commodities is responsible for 20 to 25 percent of tropical deforestation, while the remainder is driven by domestic demand in developing countries (**Figure 1**).[5] The groups most affected by the damage to forests – poor populations and vulnerable local communities – are pushed further into the forest or to rapidly urbanizing areas due to a lack of alternative options for local economic development.

Forests are under threat not only from global markets, but also from growing demand due to populations in forest areas and urban centers. Billions of people, particularly Indigenous Peoples (IPs) and local communities (LCs), rely on forests for subsistence or pursue small-scale commercial forest activities that sustain livelihoods (e.g., collecting fruits and timber, traditional shifting cultivation, farming, mining).[6] These activities can lead to deforestation or permanent degradation when demand pressure outpaces the rate of regeneration.

The largest driver of deforestation is the agriculture sector. In 2021, the production of agricultural commodities – especially palm oil, soy, and beef – was responsible for nearly 6 million hectares of permanent deforestation. After agricultural commodity production, the largest drivers of deforestation are forestry and shifting cultivation, which cause temporary tree cover loss of 7 and 6 million hectares, respectively.[c,7] A recent study[8] found that 35 to 55 percent of tropical forest land cleared for agriculture is not immediately put into production and remains unused for at least a few years (see **Figure 1**). This could be due to land speculation, unsuitability of the land for cultivation, issues related to tenure, or market fluctuations that make farming financially unattractive.

Deforestation is often enabled by the establishment of infrastructure, which intentionally or unintentionally opens up access to forests. The gravest forest risk comes from so-called megaprojects, which combine multiple types of transportation and energy infrastructure with agricultural commodity production, natural resource extraction, and planned urbanization. Such projects are currently underway or planned in all major tropical forest regions, including the Amazon, the Congo Basin, Indonesian Borneo and Papua, and the Mekong Delta.[9]

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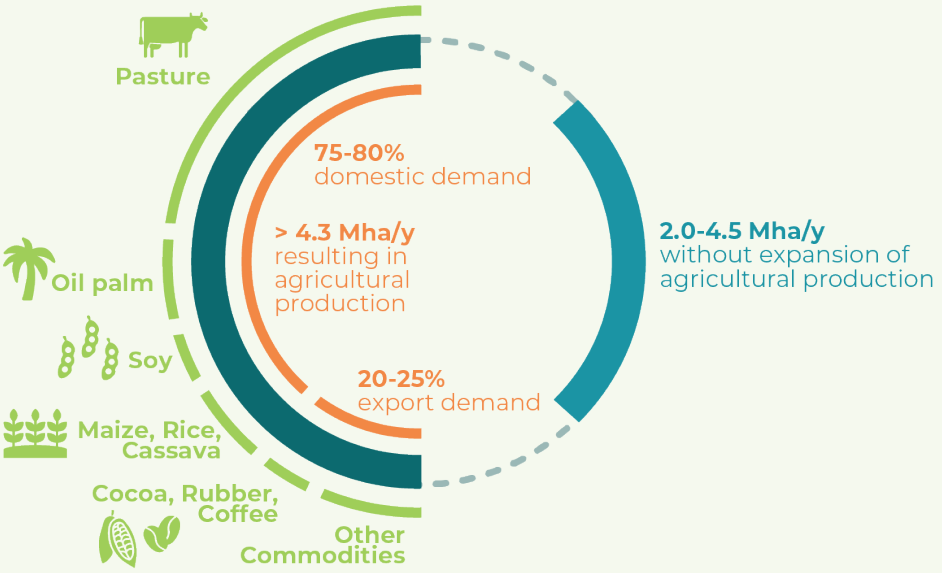
[b] In the context of this report, *sustainable development* means that forests are sufficiently valued for their contribution to human well-being and ecosystem services as countries also pursue economic growth and social inclusion (building on the UN definition that sustainable development "meets the needs of the present without compromising the ability of future generations to meet their own needs"). Similarly, *sustainable production* denotes production practices and approaches that maintain and regenerate forests' contributions and services for current and future generations.

[c] *Shifting/swidden agriculture*: traditional practice that clears forest land for short-term crop production before moving on and allowing forests to regenerate, with varying effects on forests depending on the time fallow areas are given for regeneration and the type of clearing techniques used.

**Figure 1. Agriculture-driven deforestation**




Source: Reproduced from Pendrill, et al. 2022

A major contributor to infrastructure expansion is the extractives and mining sector, which is poised to grow in the coming decades. The growth is largely in response to rising demand for materials required for sustainable transformation in "green transition" sectors such as energy and transport. Around 20 percent of global intact tropical forests overlaps with concessions for extractive industries.[10] Extractive industries are directly responsible for a relatively small share of deforestation, estimated to be between 1.3 and 3.3 percent in tropical forests.[11] However, extractive industries can support local population increase that drives expansion of infrastructure and forest-risk economic activities. The contribution of extractive industries to deforestation is much larger when these indirect impacts are considered.[12] For example, mining indirectly contributes nine percent of deforestation in the Brazilian Amazon.[13]

## 2. What has been pledged on sustainable production and development?

Over the last decade, governments and companies have made numerous commitments and statements indicating their intent to address deforestation from commodity production. A notable recent pledge is the Glasgow Leaders' Declaration on Forests and Land Use, endorsed by 145 governments during the climate summit (COP26) in Glasgow in 2021. COP26 saw the announcement of a number of other pledges setting ambitious targets for 2025 or 2030 (**Table 1**[d]).

One year after their adoption, it is too early to assess progress under these pledges. While all pledges propose some kind of reporting mechanism, few public disclosures have been made on pledge implementation to date. In the case of the Glasgow Leaders' Declaration, the reporting mechanism remains to be developed.

[d] Other pledges include SOS Cerrado, Retailers' Commitment on Nature, several pledges related to soy in the UK, France, Denmark, and France, as well as a pledge related to salmon.

No pledge explicitly addresses forest impacts from extractive industries and infrastructure development, though extractives and infrastructure impacts do receive a mention in the Glasgow Leaders' Declaration. This gap highlights the limited attention that these drivers have received in the international forest, biodiversity, and climate conversation to date.

**Table 1. Examples of pledges and other initiatives related to sustainable production**

| Pledge or Initiative | Description | Intermediate targets and progress reporting | Final target |
|---|---|---|---|
| Glasgow Leaders' Declaration on Forests and Land Use | 145 national governments endorsed this declaration with an overarching goal to halt and reverse forest loss and land degradation by 2030. Among the six themes included in its scope are sustainable trade, development, and production; rural livelihoods; and sustainable agriculture policies and programs. | Governments joining the Forests & Climate Leaders' Partnership will take stock starting at COP 27 in 2022. The format is still unclear. | Halt and reverse forest loss and land degradation by 2030 |
| Consumer Goods Forum's Forest Positive Coalition (launched in 2020) | A CEO-led initiative of 21 of the world's largest manufacturers and retailers who have committed to promoting and adopting sustainable business practices, including sourcing deforestation-free commodities such as palm oil, soy, paper, pulp and fiber-based packaging, and beef, and ensuring alignment with the CGF Priority Industry Principles against forced labor.[14] | Members chose to publicly report against 58 Key Performance Indicators (KPIs), while also defining their own company milestones. The annual report provides a detailed overview of members' individual performance, currently disclosing on 73% of KPIs. | Transforming production landscapes, in areas equivalent to our collective production base footprint, to forest positive by 2030 |
| Agricultural Commodities Companies: Traders' Statement | 12 companies, including traders with a major global market share in commodities such as soy, palm oil, cocoa and cattle, plan to lay out a shared roadmap for enhanced supply chain action consistent with a 1.5 degrees Celsius pathway.[15] Key areas of focus include enabling policy environments, transparency on scope 3 emissions and indirect supply chains, and improving livelihoods for farmers. | N/A | By November 2022, the group plans to present a roadmap for enhanced supply chain action. |

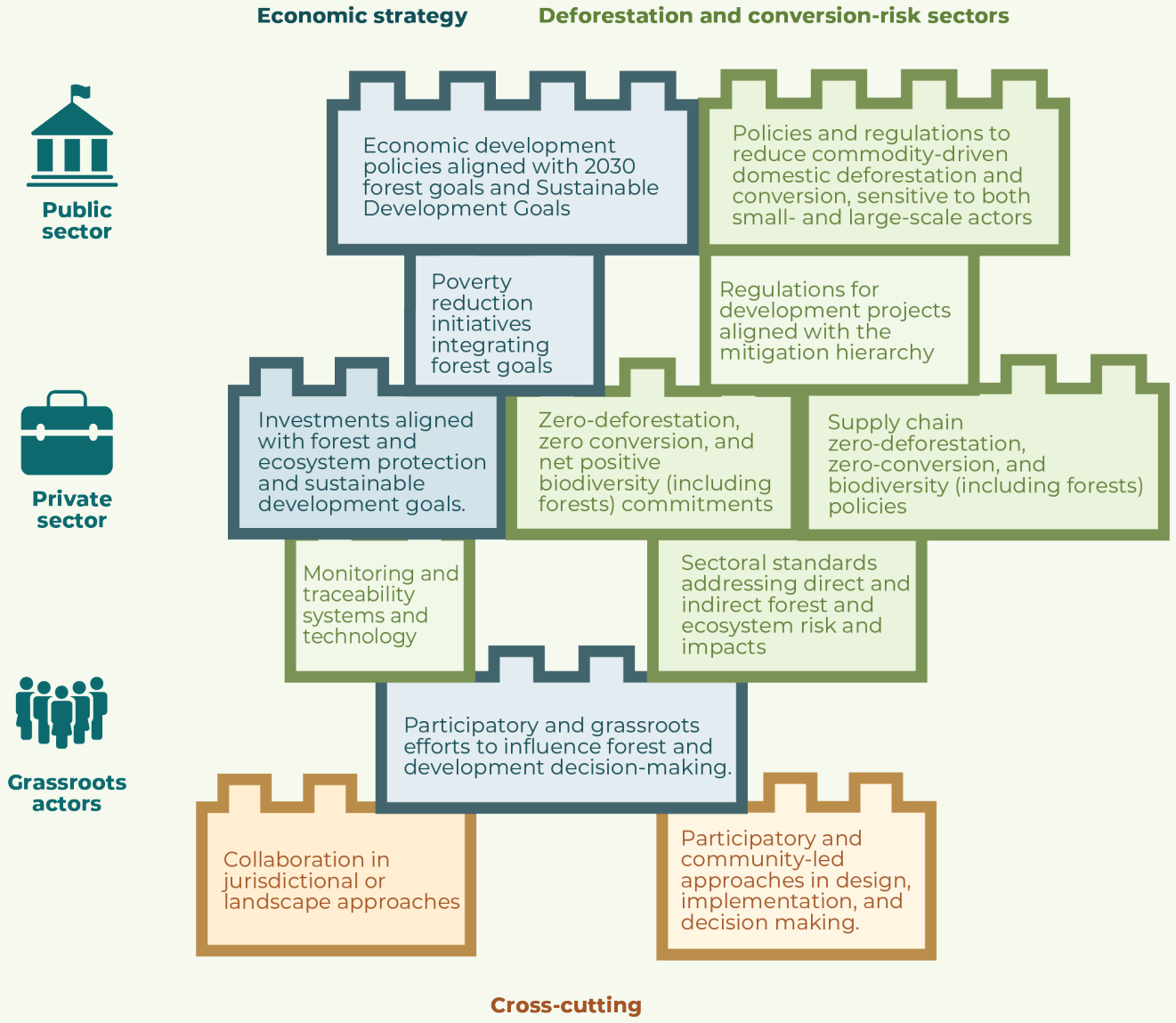
## 3. How does this report assess progress?

The report assesses progress of governments, companies, and grassroots actors across a range of "building blocks" that will be essential for sustainable use and protection of forests (**Figure 2**).

Many of the building blocks assessed overlap with the Theme 4 assessment on Forest governance. Effective public policy and regulation of the agricultural and extractive sectors are important aspects of an effective

forest legal framework. International engagement to reduce imported deforestation is also a key factor in progress. In addition, recognition of and respect for IP and LC rights, and participatory and inclusive forest decision-making and land use planning, are fundamental issues of equitable governance. This report only touches on those building blocks most relevant to the deforestation-risk sectors under discussion.

**Figure 2. Building blocks for sustainable production and development aligned with forest goals**




This report builds on and draws from previous NYDF Assessment reports, complemented by updated datasets, where available, and by additional literature review. Data and analysis from CDP, Forest 500, Supply Change, and Zoological Society of London's Sustainability Policy Transparency Toolkit (ZSL's SPOTT) are integral to assessing company progress in agriculture and the extractive industries. CDP expanded its disclosure framework in 2019 to include new sector-specific questions on forests for metals, mining, and coal companies. The resulting disclosures in 2019, 2020, and 2021 provide the first insight of their kind into corporate action on reducing the forest and biodiversity impacts in these sectors. This report also contains

illustrative examples and case studies from a set of country-level assessments conducted by the Forest Declaration Assessment for 13 countries[e] in 2022.

Though this report aims to assess progress globally, it contains relatively more information on tropical forests and developing countries, in part due to a trend in available data and literature. The report also emphasizes the actions of multi-national companies over national-scale companies – for example, those supplying domestic demand markets for commodities – and emphasizes supply side measures over demand side, for similar reasons on data availability. Future assessments will continue to aim for more comprehensive coverage globally.

This report focuses on forests rather than other terrestrial ecosystems. The focus on forests stems from the Forest Declaration Assessment's history and mandate as an initiative to track the NYDF. It does not intend to imply that other ecosystems are less impacted by deforestation risk sectors (e.g., the Cerrado's savannahs and the Great Plains' old-growth grasslands are the largest conversion fronts outside of the Amazon[16]), nor that the protection and restoration of other ecosystems is less crucial to reducing the impacts of climate change and safeguarding biodiversity. Instances of the phrase "deforestation-free" throughout this report may also be interpreted to include "conversion-free" where appropriate.

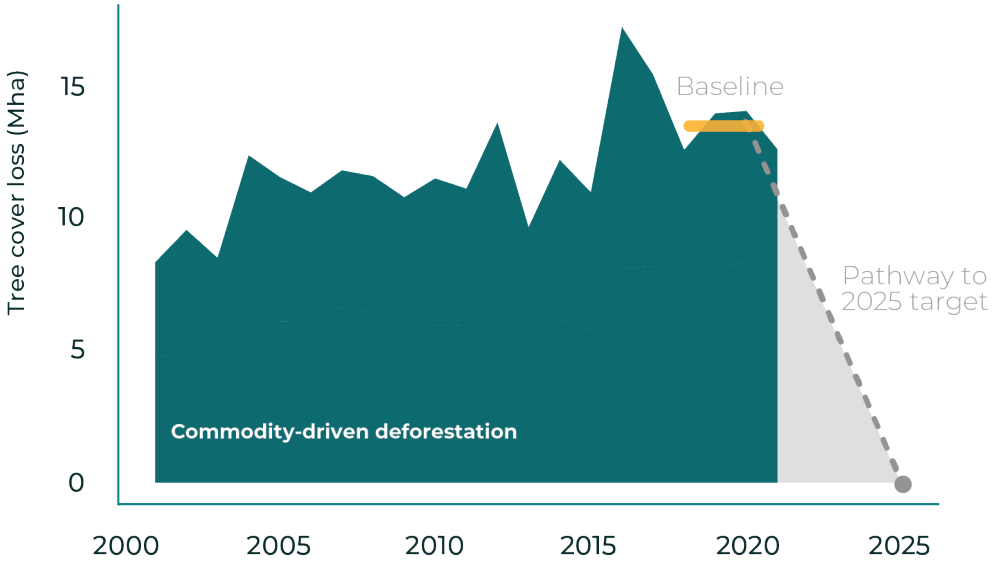
[e] Cambodia, Cameroon, Canada, Colombia, Democratic Republic of the Congo, Dominica, Ecuador, Gabon, Indonesia, Kenya, Liberia, Republic of the Congo, and Vietnam

# Findings

With only eight years left to achieve the 2030 forest goals, and three years left to achieve the private sector goal to eliminate deforestation from company supply chains by 2025, recent deforestation rates show that the world is not on track. Efforts to end deforestation have achieved important but insufficient reductions. Commodity-driven deforestation – defined as permanent tree cover loss from agriculture, mining, and energy infrastructure – was reduced by six percent in 2021 compared to the average of previous years (2018-20). Recent deforestation from these drivers was reduced compared to the record highs seen in 2016-17, but rates are still higher than in any previous year.

While the 2021 reduction is notable, it is far from the reduction needed to eliminate deforestation from agricultural supply chains by 2025. Between 2018-20, on average, six million hectares of forest were cleared annually for commodity production. This number needs to decrease by an average of 1.2 million hectares (20 percent of 2021 levels) annually from 2021 through 2025 to reach zero hectares of commodity-driven deforestation in 2025 (**Figure 3**). For every year that the 1.2 million reduction target is not met, the following years need to make up the difference.[f]

**Figure 3. Commodity driven deforestation, in million hectares, and the pathway toward the 2025 goal**




Source: GFW, Hansen et al. 2013, and Curtis et al. 2018, and Climate Focus projection of the pathway from 2021 to 2025 based on a target of zero gross deforestation from commodity production by 2025
Note: Commodity driven deforestation includes conversion to non-forest use primarily for commercial agriculture, but also mining or energy infrastructure.

[f] It is important to note that this linear trajectory does not consider the cut-off dates that companies, certification standards, and some regulations (e.g., the Amazon Soy Moratorium and forthcoming EU legislation) set in order to communicate and enforce which land must not have been used for cultivation.

# 1. Have governments advanced their efforts to achieve forest goals?

## 1.1 Aligning macroeconomic and development priorities with forest goals

*Governments have considerable influence over the use of forests, land, and resources. They can align macro-economic and development priorities with forest goals by making strategic decisions for economic sectors to minimize forest clearance and degradation, at home and abroad. Aligning forest goals and reconciling tradeoffs with other goals does not mean that all deforestation can be stopped. It means that forests' contributions and services for current and future generations are carefully valued and regenerated.*

Forest goals have been widely adopted. Almost all (193) national governments signed on to the sustainable development goals as part of the 2030 agenda. Many developing countries have forest strategies in the context of REDD+,[g] setting up cross sectoral coordination mechanisms and initiating important reforms. Through "readiness" funding from donors, more than 50 governments, mostly in tropical countries, have laid the groundwork for reforms by assessing the drivers of deforestation and forest degradation, establishing institutions for coordination and collaboration, building forest monitoring capacities, and installing systems for environmental and social safeguards. While most countries have yet to receive results-based finance (see the Theme 3 report on Forest finance), national REDD+ efforts have been instrumental in driving forest policy changes such as formalizing IPs' and LCs' land rights, reforming forest laws and regulations, and creating new participatory mechanisms.[17]

However, there is limited information available on how policy makers integrate forest goals into decision-making, whether risks are assessed and mitigated, how potential tradeoffs are weighed, and whether investments contribute to or are paired with commensurate investments for other sustainable development goals – especially economic development and poverty reduction. In most countries, policies fail to integrate forest concerns, have loopholes in their design, or are not appropriately enforced (see **Box 1**)[18] and deforestation-driver sectors continue their business-as-usual activities that lead to forest loss. Governments have yet to implement the bold sectoral reforms needed to incentivize the sustainable use and protection of forests, and disincentivize their destruction.[19]

This is perhaps best illustrated by the sheer scale of investments into economic sectors that drive deforestation compared to sustainable investments aligned with forest goals. The Belt and Road Initiative (BRI), for example, has mobilized trillions of dollars for investments in infrastructure, energy, industrial capacity, and telecommunications that will cut across forests and other fragile and biodiverse landscapes around the world. The BRI, which is promoted by the Chinese government, currently spans 147 countries.[h,20] Independent analyses have identified major direct and indirect environmental risks from the BRI—particularly for Southeast Asia and tropical Africa.[21] In contrast to the trillions of dollars for the BRI alone, global public investments in forest goals amount to roughly USD 2.3 billion per year, covering only a small fraction of what will be needed (see the Theme 3 report on Forest finance).

[g] REDD+: reducing emissions from deforestation and forest degradation, and fostering conservation, sustainable management of forests, and enhancement of forest carbon stocks

[h] As of March 2022.

### BOX 1. EXAMPLES OF GOVERNMENT POLICIES AND THEIR ALIGNMENT WITH FOREST PROTECTION GOALS

**Fiscal incentives:** Evidence suggests that governments usually only collect a small fraction of the potential economic rent from timber.[22] For example, the Indonesian government collects about USD 272 million annually in forest sector fees, 70 percent of which come from a fee that does not consider market prices, and remains unchanged since 1999.[23] When fees are due to be paid, governments often fail to collect them or do not properly use the revenues they have collected. Corruption and the shadow economy positively influence deforestation, with INTERPOL estimating the global cost of corruption in the forestry sector to be in the order of USD 29 billion annually.

**Environmental and social impact assessments (ESIAs):** ESIAs are required in most countries before development projects will be approved.[24] Yet the scope, timing, and implementation of these assessments are often poorly matched to the aim of forest protection, and not aligned with the mitigation hierarchy. ESIAs are often not required to consider the indirect or cumulative impacts of a mine or infrastructure project, and often occur only after the exploration phase has been completed, making them less likely to influence whether a mining license is actually granted.[25]

**Protected areas:** Protected area designation can mitigate forest encroachment by extractive industries. However, many countries carve out exceptions to these restrictions for industry, and recently many protected area restrictions have been loosened. Globally, 61 percent of protected area downgrading, downsizing, and degazettement (PADDD) events are related to industrial-scale resource extraction and development (including mining).[26] Many countries have embraced PADDD to stimulate economic recovery in the wake of the COVID-19 pandemic. In 2020, Colombia implemented a "sustainable recovery" policy, which deemed 35 mining, oil, and electric power projects to be "strategic and priority."[27] In Honduras, the Ministry of Natural Resources and Environment permitted the granting of environmental licenses online and reformed the mining law to grant tax benefits to mining companies under the pretext of the pandemic.[28] The Salonga and Virunga Parks – World Heritage sites in the Democratic Republic of the Congo – are currently threatened by oil and gas production.[29]

Even governments that have adopted "green growth" agendas for economic development struggle to make investments that are aligned with environment or forest goals. For example, a 2021 analysis of COVID-19 stimulus spending found that countries targeting "green" investments largely missed the mark on nature.[30] A sample of ten European countries' stimulus plans, totaling EUR 500 billion, was reviewed for predicted impacts in climate and nature. Over half of nature-relevant spending was expected to be harmful for nature.[i] Meanwhile, Cambodia and Lao People's Democratic Republic (Lao PDR) have targeted "green growth" while opening their economies to multinational enterprises and large-scale extractive, energy, and infrastructure projects without reconciling land use trade-offs or ensuring participatory decision-making.[31] Similarly, in Ecuador, despite the rights of nature being recognized in its 2008 Constitution, oil revenue remains and will likely become an even more important backbone of the Ecuadorian state's revenue. This is in spite of significant and frequent forest degradation from oil infrastructure development, oil spills, and poor management of toxic wastes.[32]

[i] Nature-relevant spending includes potential impacts on forests, e.g., through subsidies or waved fees for forest-risk agriculture, wavers of forest conservation mandates, or other environmental deregulation.

### 1.3 Addressing deforestation while promoting sustainable livelihoods

*Addressing poverty and deforestation for rural populations that rely on forests (or on forest clearance and degradation) for their livelihoods is a complex challenge. While increases in productivity can provide higher incomes for small-scale actors like farmers and artisanal and small-scale miners, without safeguards increased productivity can increase risks for forests as well as to the livelihoods and security of local communities. Intensification of production does not by itself lead to land sparing. Instead, by increasing profitability, intensification can incentivize expansion into new forest areas, whether clearing new cropland or opening new mine sites. Therefore, governments need to provide a suite of enabling conditions and targeted incentives to avoid any contrary effects (summarized as "PRIME" dimensions[j,33]) Specifically for artisanal and small-scale miners, evidence also suggests that mining sector policy and regulation have relatively less impact than governance improvements (e.g., protected area policies).[34]*

Most countries have schemes in place for collaborative or community forestry, for example Indonesia, Guatemala, Nepal, and a number of countries in the Congo Basin.[35] Programs have yielded results in both poverty alleviation and forest protection where they were able to involve local communities and carefully assess community needs and capacities, and to assure secure tenure and rights. Our analysis[36] shows that in addition to interventions focused on institutional capacity-building, successful interventions by governments and civil society[37] included productivity (e.g., supporting forestry enterprises), institutions (e.g., forestry planning), and market access (e.g., certification). These interventions were supported through consistent funding. An analysis of 23 countries with such schemes shows, however, that most are not implemented at large scale.[38] The study also found that most of the 23 countries failed to provide robust tenure to collective/community forests – a key enabler of successful community forest management – while tenure for companies and smallholders was much more robust and well-implemented.[39]

Countries all over the world are employing payment for ecosystem services (PES) schemes. Examples from Brazil, Costa Rica, Mexico, and Vietnam evidence PES schemes' effectiveness in incentivizing environmental protection.[40] Annual financial flows through PES schemes for forest and land use amounted to about USD 9 billion in 2015-16.[41] An analysis by CIFOR of 226 REDD projects demonstrated that PES schemes offer a direct and flexible model for incentivizing forest protection while providing additional income for local communities.[42]

Many countries provide direct support to rural populations with positive impacts on forests as co-benefits. For example, the governments of Indonesia, Nepal, Liberia, Mozambique, Madagascar, Argentina, and Kenya are promoting intensification and permanent forms of cultivation where extensive agriculture systems such as shifting cultivation are prevalent.[43] However, the status of implementation of these initiatives is unclear. Other countries provide support without a primary focus on forest goals. Brazil, for example, operates several incentive programs, including the rural credit program, targeted at improving practices among smallholder farmers.[44]

The effectiveness of these programs is often limited by insufficient funding or limited capacities of relevant government institutions. For example, smallholder cattle ranchers in the Brazilian Amazon lack access to technical assistance and often rely on extensive farming and pasturing. The main limitation is the lack of qualified extension officers; basic services, such as health and education, are also in short supply.[45] Similarly, in Indonesia, the role of extension service providers promoting better agricultural practices among smallholder palm oil farmers is limited by lack of capacity.[46]

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[j]Interventions to boost forest and agricultural productivity (P), governance reforms to strengthen formal and information land rights (R), regional investments in institutions, infrastructure, and public services (I), interventions that enhance market access (M), mechanisms that enhance the flow of benefits from forest ecosystem services (E) to the poor.

Where programs are effective, their impact on forests remains unclear. In the cocoa sector in West Africa – a smallholder sector tied to commodity markets and characterized by poor land management and widespread poverty – there is evidence that government support has led to increased productivity. There is a risk, however, that increased productivity may subsequently incentivize farm expansion and additional deforestation.[47]

Environmental governance has not yet been an effective mechanism to reduce the forest impacts of artisanal and small-scale mining (ASM). A 2019 World Bank study found that increased incomes and other economic conditions are stronger determinants of ASM than environmental governance mechanisms and suggested that these mechanisms are poorly designed for the regulation of ASM. [48] The same study found that forest and protected area policies and regulations have more influence than mining sector policy and regulation on ASM. [49] These findings indicate a need for mining ministries to more effectively engage in the governance of ASM and the management of its forest impacts.[50] Where governments have attempted to address the risks of ASM – including deforestation and exposure to toxic chemical such as mercury – through formalization,[k] forest impacts have in some cases paradoxically increased due to mechanisms like perverse incentives and increased mechanization, especially when not paired with supportive investments in tenure security and miner training.[51] In Peru, efforts to formalize ASM from 2001 to 2014 led to increased mining activity and an additional 40,000 hectares of forest loss.[52]

In the absence of effective national legislation, ASM has been the target of international regulations and guidance, as well as of regional frameworks. Environmental and, specifically, forest-related considerations have not featured strongly in these initiatives.[53] However, momentum is building in policy and industry-led initiatives to incorporate environmental concerns, centering on due diligence of business integrity and human rights. Critics of mandatory supply chain due diligence – for example, the methods envisaged by the EU's Corporate Sustainability Due Diligence Directive – suggest that such market-led regulations could lead to the exclusion of ASM from responsible supply chains, as responsible players may abandon this higher risk sector altogether due to the higher transaction costs and reputational risks associated with responsible ASM sourcing.

Multilateral and international organizations are also bringing in new mechanisms and approaches to reduce forest impacts of ASM. The World Bank, for instance, has developed a 'Bolt-on Forest-Smart ASM Standard' to enable ASM enterprises, their regulators, and buyers to introduce 'forest-smart' systems of production and trade with support from fair trade or multistakeholder initiatives, local support organizations, and/or downstream businesses. Several countries are on board to pilot this Standard, but, as of yet, financing to support this effort has not materialized.[54] Meanwhile, the Global Environmental Facility's GOLD+ program, which aims to reduce mercury use in ASM, is moving to incorporate a multi-sectoral approach into its activities, considering all sectors such as forestry, water, health, and environment.[55]

[k] Formalization includes measures to bring artisanal and scall-scale miners into the regulated economy, including registering concessions, demarcating extraction zones, and issuing licenses.

# 2. Have companies advanced their efforts to achieve forest goals?

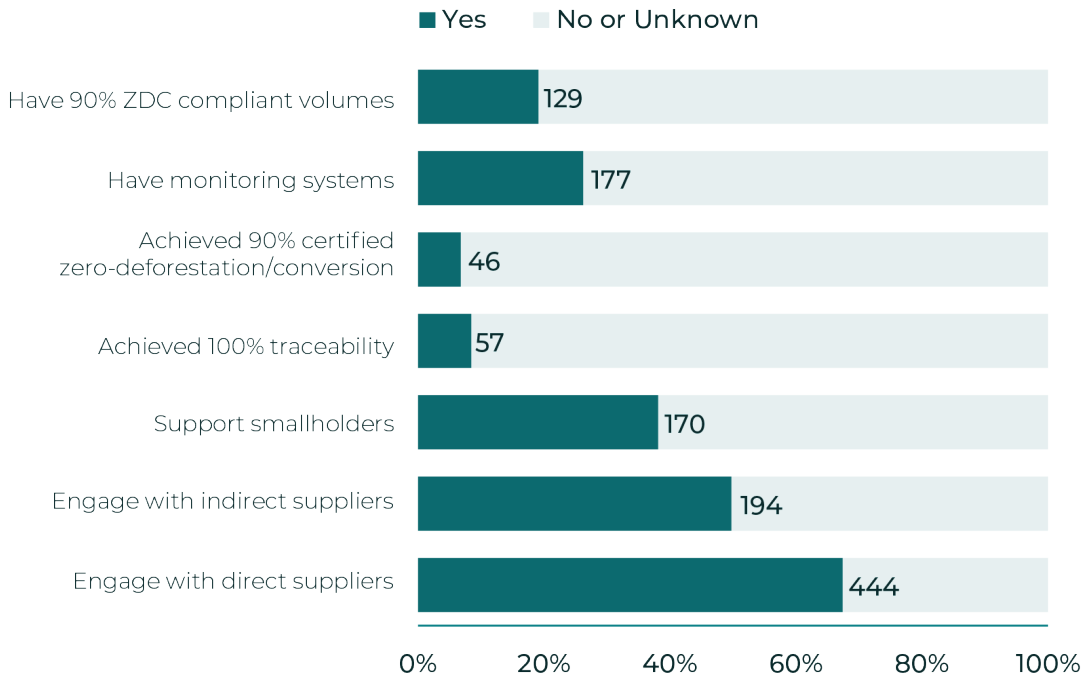
## 2.1 Eliminating deforestation from agricultural supply chains

*Producers, traders, processors, and retailers of commodities need to take measures to eliminate deforestation from the entire commodity supply chain. Companies must establish internal and supply chain management systems and processes, including for risk assessment, traceability, managing and supporting suppliers, and monitoring and verification of compliance to enable effective implementation. While the bulk of action and attention has been paid to prominent forest-risk commodities like soy, palm oil, cattle, and cocoa, other commodities such as rubber and coffee must be addressed comprehensively as part of supply chain interventions.*

Civil society organizations supported by public and private donors have laid the groundwork for private sector action. They have developed extensive guidance (e.g., the Accountability Framework initiative and numerous certification standards) for companies to design and implement policies in their supply chains to address deforestation. They have gathered data on forests, deforestation hotspots, commodity trade, and deforestation risks in supply chains and made it available through platforms like Global Forest Watch, trase.earth, and Mighty Earth's Cocoa Accountability Map, among others, for companies to use and act upon.

Despite this engagement and effort by civil society over the last decade, many companies have yet to adopt robust and comprehensive commitments. The majority of major companies in forest-risk commodity supply chains assessed by Forest 500 and Supply Change (72% and 77%, respectively) have no clear, comprehensive, or ambitious policy to eliminate deforestation from their supply chains.[56]

**Figure 4. Implementation of zero-deforestation commitments (ZDC) by companies reporting through CDP**




Source: CDP analysis of self-reported and disclosed mining company data in 2021

Among the large- and medium-sized companies that disclosed on their policies for forests through CDP, only a third (36%) reported timebound, quantifiable no-deforestation or no-conversion commitments aligned with the Accountability Framework initiative. 13 percent of companies included commitments to remediate, restore, and/or compensate past harms and commitments to protect the rights and livelihoods of local communities. Half (53%) of the companies disclosed that they have a policy related to forests or natural ecosystems that does not meet the best practice set by the Accountability Framework initiative. Based on data from ZSL's SPOTT, in the palm oil sector only eight percent (6 out of 79) of companies have a commitment to no conversion that aligns with the Accountability Framework criteria for natural ecosystems.

### BOX 2. COMPANY PROGRESS ON IMPLEMENTING ELEMENTS OF SUPPLY CHAIN SUSTAINABILITY

**Traceability:** 57 companies disclosing through CDP (of 512 with traceability systems) report that they trace 100 percent of their sourced raw products back to unit of origin (i.e., plantation, farm, and cattle ranch). According to Supply Change, of the 125 largest companies (those with global operations accounting for over USD 4 trillion in global sales), only 35 report the percentage of their volumes traceable to the source or primary production unit for at least one commodity sourced.

Across CDP and Supply Change datasets, improved traceability is most common in the palm oil sector. At least 35 percent of companies that disclose through CDP indicate that they can trace at least half their palm oil volumes to the processing level. Unless companies can trace their commodities back to at least subnational producer region or the location of origin, determining the risk of deforestation associated with these commodities remains a challenge.

**Certification:** The main certification schemes with zero-deforestation requirements are the Roundtable on Sustainable Palm Oil (RSPO), the Round Table on Responsible Soy (RTRS) and UTZ/Rainforest Alliance (RA) for cocoa. In addition to zero-deforestation requirements, companies need to source segregated or identify preserved materials certified under these schemes to provide zero-deforestation assurance.

Certification use is highest among companies reporting on palm oil (79%), followed by timber products (64%), and coffee (52%). But only 3 percent of companies reporting on palm oil and 2 percent of those reporting on soy report that at least 90 percent of their volumes can be identified as originating from preserved or segregated supply chains. No companies report having achieved this level of certification for cattle products, natural rubber, cocoa, or coffee.

While certifications are an important tool to achieve a deforestation-free supply chain, their effectiveness in incentivizing deforestation-free farming and hence reducing deforestation varies. For example, while households with farms certified under RA-UTZ certification for cocoa and RSPO certification for palm oil have generally seen improved income, there is not enough clear evidence that certification results in reduced deforestation.[57]

**Supplier engagement:** Palm oil supply chains are doing comparatively well on supplier engagement compared to other forest-risk commodities. Based on data from ZSL's SPOTT, 52 percent of 91 assessed palm oil producers and processors report they have or support a program to support independent smallholders in the supply chain.

Engagement with indirect suppliers is challenging, especially in sectors that are dominated by many smallholders and intermediaries, such as the cocoa and palm oil sectors. In the cocoa sector, for example, companies focus support mostly on large, direct supplying farms while many smallholders remain unsupported. In the past few years, the CFI reported providing technical training in good agricultural practices to approximately 730,000 cocoa farmers in Côte d'Ivoire and Ghana.[58] Since farmers are likely to receive support from multiple companies, this figure likely overestimates the share of the region's roughly two million farmers who have received support.

An even smaller share of companies has made progress in translating their commitments into actions (**Figure 4** and **Box 2**). Less than 20 percent of companies disclosing to CDP report near full compliance with their zero deforestation commitments. Many companies have put traceability systems in place – often,

supported by third-party certification – yet this has not resulted in sufficient product traceability. Based on CDP's assessment, only 7 percent of disclosing companies report that at least 90 percent of at least one commodity is certified by a scheme that ensures no-deforestation or no-conversion. While half of companies (50%) regularly engage with their direct suppliers, only 38 percent engage with smallholder suppliers, and only 22 percent offer technical or financial assistance.

Initiatives by groups of companies in collaboration with public and civil society sectors have been more successful than individual commitments. One of the most successful examples is the Amazon Soy Moratorium, where almost all soy traders in the region collectively decided to stop the purchase of soy linked to deforestation (**Box 3**).

CASE STUDY

**BOX 3. THE AMAZON SOY MORATORIUM**

In 2006, the Brazilian Association of Vegetable Oil Industries (ABIOVE) and the National Association of Grain Exporters (ANEC) announced a policy that would become one of the most successful market-based conservation initiatives in the world: the Amazon Soy Moratorium. The Moratorium established that grain traders, representing 90 percent of soy trade in the region,[59] would not purchase soy grown on recently deforested land in the Amazon region. Initially agreed for a period of two years, the Moratorium was later renewed annually until 2016, when it was renewed indefinitely. The original agreement prohibited purchase of soy produced on lands cleared after 24 July 2006. This date was later pushed to 22 July 2008, the amnesty for deforestation cut-off date established in the new Brazilian Forest Code of 2012.[60]

The Moratorium is led by the Soy Working Group, a multistakeholder forum. It was endorsed by the government in 2008 with the National Institute for Space Research (INPE) supporting monitoring efforts. Banco do Brasil, Brazil's largest public bank and major funder of the Brazilian agricultural sector, is also part of the initiative.[61]

The process of systematic discussions and annual renewals of the Moratorium led to gradual improvements of its monitoring and transparency system.[62] As a result, the agreement achieved a high level of maturity and obtained impressive results. Compliance reached remarkably high levels: non-compliant area corresponded to only 2 percent of total soy grown in the Amazon Biome in the 2019/20 crop year. Only a residual fraction of 0.11 million hectares were associated with deforestation after 2008.[63]

Despite the overall success of the Moratorium, concerns have been raised on risks for deforestation "leaking" to the neighboring Cerrado biome or to other commodities. The Cerrado is also experiencing deforestation driven by soy plantations, but it is not yet included in a moratorium.[64.]

## 2.2 Mitigating impact from extractive industries

*Like their counterparts in the agriculture sector, companies dealing with minerals and metals need to take action to eliminate deforestation from their value chains. In addition to their direct impact, which is low overall compared to the agriculture sector, companies also need to consider the indirect influence of opening up forests to other drivers of deforestation (e.g., through access roads to mines). Best practices for companies, usually framed in the context of biodiversity protection, require the application of the mitigation hierarchy, a decision framework which allows for the systematic consideration of negative forest impacts and mitigation options.*

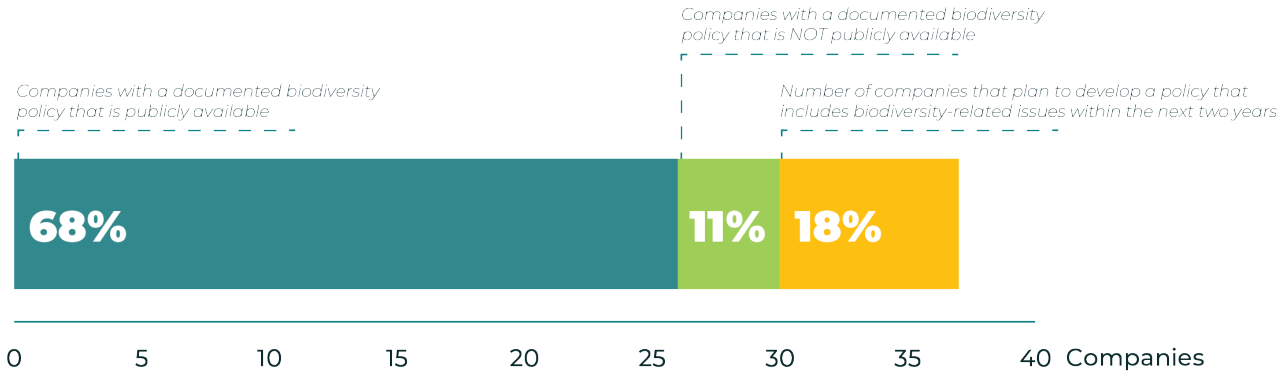
Overall, corporate transparency relevant to forest risks remains very limited in the mining and extractives sectors. The vast majority of mining companies invited to report through CDP on their forest and biodiversity plans and impacts failed to do so. Although more than two thirds (26 out of 38) of those companies have made commitments and adopted policies to reduce or avoid biodiversity loss, the quality and effectiveness of these policies is unclear due to a lack of specificity in their design.

In response to investor demand, most mining companies have now adopted some form of corporate social responsibility (CSR) approach or environmental, social, and governance (ESG) principles that guide their activities.[65] While biodiversity commitments and policies are relatively common in these principles, however, an explicit focus on forests is rare.

Of 38 mining and coal extractive companies that reported through CDP in 2021, 26 (68%) had made a public commitment to reduce or avoid impacts on biodiversity (See **Annex** for **Figure A**). Of these companies, the majority (20 companies, 53%) had company-wide commitments, rather than commitments targeting only specific mines or geographies. However, only 12 (32%) of these companies pledged to adopt the mitigation hierarchy approach. Even fewer pledged not to explore or develop mines in World Heritage sites (8 companies, 21%) or to aim for a Net Positive Impact on biodiversity (2 companies, 5%). The weakness of these and other sector practices undermines confidence in the quality and effectiveness of these commitments.

The same share of companies reporting through CDP that have a public biodiversity commitment also have a documented, publicly-accessible, biodiversity-related policy to manage impacts from their operations (26 out of 38, 68%) (**Figure 5**). A further four (11%) companies report that they have a biodiversity policy that is not publicly available, while seven more (18%) plan to develop a biodiversity-related policy within the next two years. That leaves only 1 out of 38 companies with no plans to have a policy in place by 2023.

**Figure 5. Adoption of biodiversity policies among 38 mining and coal extractive companies reporting through CDP**

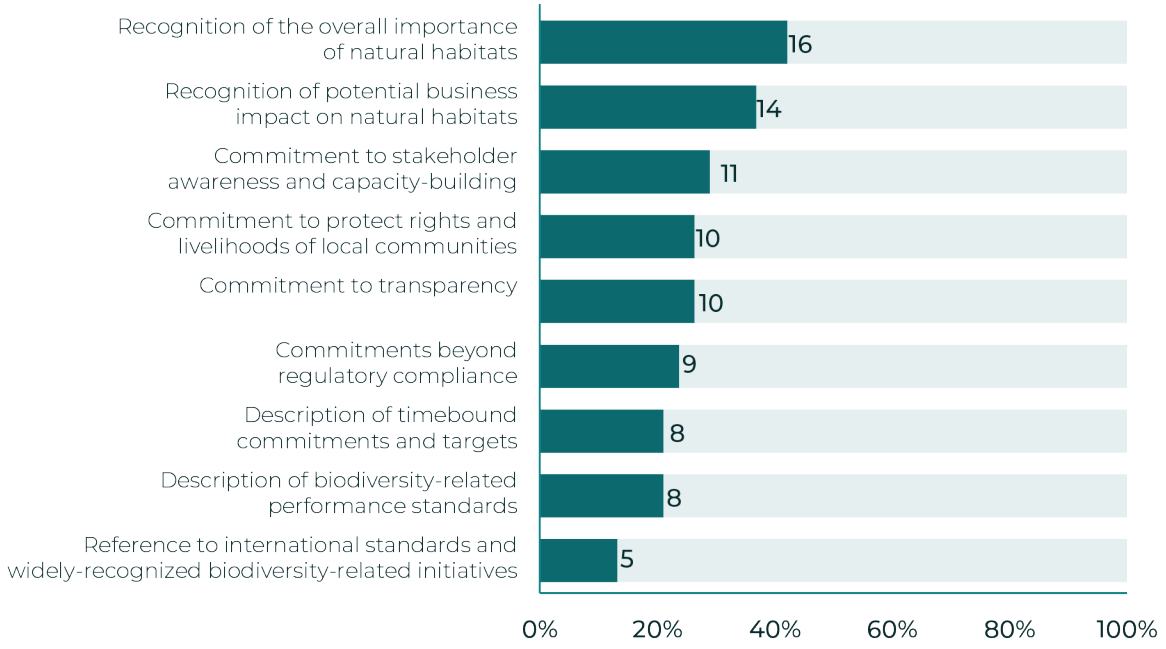



Source: CDP analysis of self-reported and disclosed mining company data in 2021

While some company policies reiterate an awareness of the importance of natural habitats and commitments to good practices (e.g., transparency), others provide more detail by setting timebound targets (8, 21%) or describing biodiversity-related performance standards (8, 21%) (**Figure 6**). Overall, well below half of the policies contain the kind of explicit commitments or references to best practices that characterize well-designed, effective policies to reduce negative forest and biodiversity impacts.

The Responsible Mining Foundation (RMF) has, since 2018, tracked mining company performance against four indicators of "responsible mining:" meaningful integration of ESG throughout the business model, transparency and data-sharing, a proactive rights-based approach to harm prevention, and international action to promote responsible mining.[66] Each of these indicators also serve as necessary, though not sufficient, building blocks for forest-positive mining and extractives. Against these measures, the RMF has found slow improvement by assessed companies, which cover 25 to 30 percent of global mining production. Companies improved by an average of 17 percent from 2018-20, and 11 percent from 2020-22. The evidence shows that progress by companies that have traditionally been leaders on responsible mining is slowing down – top tier companies only improved by an average of 4 percent from 2020-22.

**Figure 6. Scope of biodiversity policies among 38 mining and coal extractive companies reporting through CDP**




Source: CDP analysis of self-reported and disclosed mining company data in 2021

Twelve of the 20 largest international mining companies have joined or adopted voluntary sustainability standards.[67] The International Council on Mining and Metals' (ICMM's) Mining Principles have the greatest representation: with 12 of the 20 companies as members, ICMM companies now cover 30 percent of global mining production. The Mining Association of Canada's Toward Sustainable Mining (TSM) framework is the second-most adopted standard, with seven members. Six of the top 20 companies are not members of any sustainability scheme.

Only a few mining sector standards – including the Initiative for Responsible Mining Assurance (IRMA) Standard for Responsible Mining, the IFC's Performance Standard, the Responsible Jewelry Council's Code of Practices, and to some degree the Aluminum Stewardship Initiative's Performance Standard – require mine site operators to consider indirect and cumulative impacts on biodiversity in addition to direct effects (**Box 4**).

Only 2 of the top 20 companies have adopted the IRMA's Standard for Responsible Mining, which explicitly calls for the identification of direct, indirect, and cumulative effects on biodiversity and ecosystem services. Meanwhile, the number of mine sites participating in IRMA has increased over four-fold in the last two years. As of September 2022, 23 mine sites across 19 companies are registered on the Responsible Mining Map, an increase from 5 since the NYDF Assessment in 2020. At least 13 of those sites have begun or completed an independent, third-party assessment. The TSM framework has taken a unique approach to adoption, targeting national industry bodies rather than individual mining companies. To date, the TSM framework has been adopted by nine countries' national mining associations, covering 26 percent of global mineral and metal production value.[68]

**BOX 4. MINING SECTOR STANDARD REQUIREMENTS FOR FORESTS**

A number of sustainability schemes targeting the mining sector have been developed, with varying relevance for forest and biodiversity protection (see **Annex**, **Table A**). At the level of mine site operations and processing, the ICMM's Mining Principles was the first international industry framework to address the environmental and social impacts of mining.[69] The ICMM and the TSM framework both require biodiversity and environmental impact assessments, with risks and impacts to be managed through application of the mitigation hierarchy. IRMA's Standard for Responsible Mining is the only standard for mine site level that requires assessment and management of "direct, indirect, and cumulative impacts."

Further up the supply chain, the ResponsibleSteel Standard extends the IRMA Standard's principles up the supply chain throughout the steel sector, requiring mine sites to assess and manage biodiversity risks according to the mitigation hierarchy. The International Finance Corporation (IFC)'s Performance Standards are one of the most common reference points for the sector and cover the entire lifecycle of an investment. IFC Performance Standard 6 states that projects should consider direct and *indirect* project-related impacts on biodiversity and ecosystem services. Similarly, the Responsible Jewelry Council's Code of Practices calls for impact assessments to cover the direct, indirect, and cumulative impacts on biodiversity and ecosystem services. The Aluminum Stewardship Initiative's version 3 of its Performance Standard, released in 2022, requires companies to assess the biodiversity and ecosystem services impacts of their operations within their area of influence, which includes indirect project impacts that affect communities' livelihoods.

# 3. Have grassroots actors advanced their efforts to achieve forest goals?

## 3.1 Engagement of civil society, Indigenous Peoples and local communities, and other citizen-led groups in grassroots movements

*Civil society organizations, non-profit institutions, and IPs' organizations, as well as ad hoc or informal coalitions of smallholder farmers, women's networks, and mutual aid groups,[70] are all grassroots actors who can unite in common cause against threats to their livelihoods or the environment.[71] Grassroots actors use a variety of methods – such as organizing public protests, initiating legal challenges, and rallying international support – to influence how, where, or if development projects are undertaken and to exert LCs' rights to self-determination.*

IPs and LCs are at the forefront of grassroots environmentalism, despite facing significant risks. IPs, LCs, and grassroots actors have mobilized to gain access to and influence development planning to protect forests, ecosystems, and livelihoods. Grassroots movements and resistance can play a role in raising awareness of the environmental and social impacts of large-scale development projects (**Table 2**). These efforts work to influence public opinion and inform land use decision-making and policy.[72]

**Table 2. Statements on extractive projects from Indigenous peoples and local communities, project proponents and government leaders, and international institutions**

MINING

### SWEDEN

*In March 2022, the Swedish government awarded a mining license to Beowulf Mining's wholly owned Swedish subsidiary Jokkmokk Iron Mines AB for an iron ore mine in Gállok, an arctic region within the Sápmi (ancestral territory of the Sámi people). Prior to licensing, the Sámi expressed concern about a lack of good-faith consultations and failure to obtain the free, prior, and informed consent. The iron ore mine would affect a World Heritage Site which includes primeval forest and reindeer migratory routes, with potential outcomes including biodiversity loss, deforestation, and reduction of ecological integrity, per EJAtlas.*

"Today, our reindeer have to live with the negative impacts of 'renewable' energy production and large-scale forestry. In addition, we also have to work around infrastructures and deficient conservation policies.... There is no more room for a co-existence between Sámi livelihoods and extractive industries."

- **JAN-ERIK LÄNTA, chairman of Jåhkågasska Sámi village**[73]

"Today, the Sámi are required to appeal to colonial governments and their legal frameworks to raise concerns about projects impacting our lands. But we never gave up our territories. Sámi customary law and land management should have the final say on any initiatives in Sápmi."

- **SANNA VANNAR, president of the Sámi youth organization Sáminuorra**[74]

"What local people?"

- **CLIVE SINCLAIR-POULTON, Chairman of Beowulf Mining PLC**[75]

"We are very concerned by the lack of good-faith consultations and the failure to obtain the free, prior and informed consent of the Sẓmi, and over the significant and irreversible risks that the GẒllok project poses to Sẓmi lands, resources, culture, and livelihood."

- **JOSÉ FRANCISCO CALITZAY, UN Special Rapporteur on the Rights of Indigenous Peoples; and DAVID R. BOYD, UN Special Rapporteur on Human Rights and the Environment**[76]

"In this case, there have also been two conflicting national interests [minerals and reindeer husbandry], meaning that... the Government must decide which national interest is most likely to promote the long-term management of land, water, and the physical environment in general.... Overall, the area covered by the exploitation concession is not considered to be of high nature conservation value."

- **Swedish Ministry of Enterprise and Innovation**[77]

MINING

### GUYANA

*In 2007, the village of Isseneru – an Indigenous community – received title to their land from the government of Guyana. However, miners who had previously been granted concessions continued to destroy the forests and ecosystems of Isseneru without intervention by the government. After two High Court rulings in 2008 and 2013 went against the village, the village and the Amerindian Peoples Association of Guyana filed a petition against the government of Guyana with the Inter-American Commission on Human Rights (IACHR). In 2021, the IACHR ruled that the government of Guyana had violated the people of Isseneru's territorial and human rights.*

"The mining is so close to the center of the village that you can actually feel it in your body. The situation is terrible."

- **DWIGHT LARSON, Project Officer for the Amerindian Peoples Association (APA)[78]**

"While the decision provides us with a sense of relief, we will not be satisfied until significant steps are taken by the government to address the blatant and now validated violations of our rights and the rights of other Indigenous peoples across Guyana who are faced with similar situations."

- **Isseneru Village Council[79]**

"[There is nothing more the Government can do] to deter marauding miners laying waste to their Community."

- **PAULINE SUKAI, Minister of Amerindian Affairs[80]**

"[The people of Isseneru must receive] full reparations for the material and immaterial damages they suffered on the account of the violation of their human rights. The reparations must include measures of compensation, satisfaction and any other which are deemed appropriate in accordance with the Inter-American Standards..."

- **The Inter-American Commission on Human Rights (IACHR)[81]**

"[The Government is not going to tolerate any bullying or] any violation of people's rights.... [T]his is happening; it seems, with complicity of some individuals at the junior level within the Government."

- **BHARRAT JAGDEO, Vice President pf Guyana[82]**

AGRIBUSINESS

## BRAZIL

*The Estrondo mega-farm produces soy, corn, and cotton on between 200 to 300 thousand hectares, approximately one fifth of the municipality of Formosa do Rio Preta in Bahia state, Brazil.[83] The farm has been accused of acquiring its land holdings largely through land grabbing, fraud, and intimidation, leaving local Indigenous and Afro-descendant (quilombola) communities but off from their traditional territories in the Cerrado. Between 2004 and 2006 alone, the Estrondo estate converted 77,000 hectares of native vegetation to cropland.*

*In 2017, a court ruled that the Estrondo mega-farm must return 43,000 hectares to seven local traditional communities. Instead of complying with the order, the farm installed electric fencing and built a two-mile long trench to restrict access, and allegedly paid bribes to judges to have them amend the court order. At least one judge involved is now incarcerated on bribery charges.[84] The traditional communities still do not have access to their common grazing lands, a situation enforced by armed guards who have in some cases shot community members grazing their cattle.*

"The mining is so close to the center of the village that you can actually feel it in your body. The situation is terrible."

- **GUILHERME FERREIRA DE SOUZA, Farmer and Quilombola community member[85]**

"Cachoeira do Estrondo Condominium condemns acts of violence and clarifies that the hired surveillance teams aim to ensure the property security and physical integrity of workers and residents of the enterprise. [Furthermore,] the management of Cachoeira do Estrondo venture denies that it has installed guard booths or prevented access on public roads"

- **Estrondo[86]**

An analysis of 2,743 cases found that bottom-up mobilizations (including formal petitions, street protests, and public campaigns) for more sustainable and socially-just uses of the environment occur worldwide across all income groups.[87] In 11 percent of cases, mobilizations contributed to halting environmentally destructive and socially conflictive projects, and defending the environment and livelihoods.[88] Another study of 649 cases of resistance movements found that place-based resistance movements are succeeding in curbing both fossil-fuel and low-carbon energy projects, and over a quarter of projects encountering social resistance were canceled, suspended, or delayed.[89] In 2022, Ecuador saw one such case of successful mass resistance to the expansion of extractive concessions (**Box 5**).

These successes have come at a cost to the environmental defenders involved. Of the various groups involved in these forms of social protest, IPs and LCs are among the most likely to mobilize for environmental protection, participating in 41 percent of analyzed cases. Overall, environmental defenders face high rates of criminalization (environmental defenders were criminalized in 20 percent of cases analyzed), physical violence (18%), and assassinations (13%).[90] Indigenous environmental defenders face even higher rates of criminalization, violence, and assassinations.[91] Conflicts over hydropower (160 of the 649 cases reviewed) were most likely to include concerns over deforestation and ecological connectivity, and were also particularly likely to involve repression, criminalization, and assassination of social activists, especially activists from IP and LC groups. Over 200 land and environmental defenders were killed in 2021, according to Global Witness, and the mining and extractives sector is consistently ranked as one of the deadliest for defenders.[92]

CASE STUDY

### BOX 5. GRASSROOTS RESISTANCE TO EXTRACTIVES EXPANSION IN ECUADOR

Ecuador's mining sector is an important contributor to government revenue via international trade. In July 2021, three months after he was elected, President Guillermo Lasso signed Decree 95, which aimed to double national oil production and increase private sector investment to meet foreign debt repayments and address spiking unemployment and poverty during the COVID-19 pandemic. This decree opened regions of the Ecuadorian Amazon to new mining concessions. Lasso also signed Executive Decree 151, which aimed to relax environmental controls to fast-track the entrance of foreign mining companies. Ecuador has a progressive constitution that enshrines the rights of nature, the rights of people to live in a healthy environment, and the rights of Indigenous Peoples, but governmental action and lawsuits in favor of mining companies have historically not aligned with the Constitution. [93]

President Lasso's decrees and the subsequent awarding of new concessions sparked protests and lawsuits.[94] In February 2022, Ecuador's Constitutional Court ruled that Indigenous peoples have the right to consent for extractive projects on their lands, clarifying that consent must be the outcome of legally required consultation processes for extractive projects in Ecuador and slowing the permitting processes for oil concessions.[95] Awarding of new concessions led to mass unrest again in June 2022. The Confederation of Indigenous Nationalities of Ecuador (CONAIE) released a list of ten demands of the government, including a moratorium on the expansion of the mining and oil industries, audits and reparations for the industries' sociological and environmental impacts, and increased respect for IP and LC rights and self-determination.[96]

In September 2022, after more than two weeks of Indigenous-led strikes to protest against extractive industries in forests and Indigenous territories, the government agreed to a temporary moratorium on new concessions and new projects in Indigenous territory and protected areas, putting new contracts for 16 Amazonian oil blocks on hold.[97] The moratorium will remain in place for at least 12 months or until the right to free, prior, and informed consultation for IPs and LCs is enshrined in law and comprehensive environmental legislation is passed. Lawsuits and protests also compelled the government to repeal Decree 95 and reform Decree 151.

A systematic review of conservation initiatives found that the active participation of IPs and LCs – through, for example, substantial input in decision-making and strong tenure recognition – resulted in significantly better environmental and social outcomes than when external organizations exert primary control.[98] Land managed by IPs and LCs sequesters, on average, more than twice as much carbon dioxide-equivalent as other lands, according to a Forest Declaration Assessment study of Brazil, Colombia, Mexico, and Peru.[99] 92 percent of forested IP and LC lands in these countries are net carbon sinks, with an average sequestration of 30 tons of carbon dioxide per hectare per year, which is equivalent to, on average, 30 percent of those countries' unconditional 2030 NDC mitigation targets.[100]

IP and LC voices are critical contributors to global narratives advocating for forests to be foregrounded in climate action and sustainable development agendas. Transnational alliances continue to unite and amplify IPs' and LCs' messages, which have caught the attention and, in certain cases, influenced the opinions of international institutions (see **Table 2**). International alliances allow movements to overcome, to an extent, authoritarian or oppressive domestic contexts as space for civil society and activism closes in many countries.[101]

# 4. Have collaborative efforts advanced to achieve forest goals?

## 4.1 Public, private, and civil society collaboration at the jurisdictional and landscape scale

*Stopping deforestation requires the engagement and collaboration of all sectors and stakeholders that enable deforestation or are affected by efforts to prevent it. This collaboration is a fundamental component of landscape and jurisdictional approaches[I] which facilitate strategic alignment between initiatives, sectors, and market incentives within jurisdictions.[102]*

Over the last decades, many international, national, and subnational multi-stakeholder and multi-sector initiatives emerged. These include public-private partnerships and civil society collaborations, commodity certifications, place-based sourcing agreements, REDD+ programs, and other jurisdictional/landscape sustainability initiatives. A 2021 study identified 80 initiatives for improving sustainable resource use in forest landscapes, of which 25 had clearly specified the roles of actors involved and formalized their collaboration.[103]

Many of these initiatives are still in their early stages, making it difficult to attribute any recent reductions in deforestation to improved collaboration. A 2018 study[104] of 38 initiatives found that most initiatives had made some progress in improving land use planning and multistakeholder governance, with limited advancements in their support for sustainable agriculture, and financing (particularly from the private sector). Challenges remain in formalizing the inclusion and fair representation of local land users – in particular of IPs and LCs[105] – and building equitable market access opportunities that consider informal institutions, practices, and social capital.[106]

Public-private partnerships that take a holistic approach to delivering environmental and socioeconomic benefits offer the greatest promise of transformative change. Even greater impact can be achieved with interventions tailored to the local context and delivered at the landscape or jurisdictional scale. Initiatives

[I] Jurisdictional approaches to sustainability seek to protect forests, reduce emissions, and improve livelihoods across political or administrative boundaries, such as countries, states, provinces, and districts, through an integrated land management that works across scales and sectors.

built through integrative, multi-purpose, and inclusive collaboration allow national and subnational governments, producers, investors, civil society organizations, and the private sector to interact with each other, build trust, and drive impact.[107] These partnerships are increasingly being established across commodity-producing regions as "jurisdictional or landscape initiatives." However, only a few initiatives have been formalized in long-term agreements or through clear management plans, monitoring systems, and reporting frameworks. Formalized examples of successful landscape or jurisdictional partnerships exist mainly in Latin America and in Southeast Asia.

# Endnotes


1. NYDF Assessment Partners. (2020). *Balancing forests and development: Addressing infrastructure and extractive industries, promoting sustainable livelihoods*. https://forestdeclaration.org/resources/2020NYDFReport.pdf; Larson, A., Sarmiento Barletti, J. P., Ravikumar, A., & Korhonen-Kurki, K. (2018). Multi-level governance: Some coordination problems cannot be solved through coordination. In *Transforming REDD+: Lessons and new directions* (pp. 81–91). https://www.cifor.org/publications/pdf_files/Books/BAngelsen180107.pdf; Larson, A., Libert-Amico, A., Martius, C., Ravikumar, A., Gonzales Tovar, J., Kowler, L., et al. (2018). *Can multilevel governance transform business-as-usual trajectories driving deforestation? Lessons for REDD+ and beyond* (No. 235). https://www.cifor.org/publications/pdf_files/infobrief/7043-infobrief.pdf; Angelsen, A., Martius, C., Duchell, A., Larson, A., Thu Thuy, P., & Wunder, S. (2018). Conclusions: Lessons for the path to a transformational REDD+. In *Transforming REDD+: Lessons and new directions*. Center for International Forestry Research (CIFOR).; Korhonen-Kurki, K., Brockhaus, M., Sehring, J., Di Gregorio, M., Assembe-Mvondo, S., Babon, A., et al. (2018). What drives policy change for REDD+? A qualitative comparative analysis of the interplay between institutional and policy arena factors. *Climate Policy*, *19*(3). https://doi.org/10.1080/14693062.2018.1507897.

2. FAO. (2022). *The State of the World's Forests 2022: Forest pathways for green recovery and building inclusive, resilient and sustainable economies*. In *The State of the World's Forests (SOFO): Vol. 2022*. https://doi.org/10.4060/cb9360en.

3. Global Witness. (2022). *Decade of defiance*. https://www.globalwitness.org/en/campaigns/environmental-activists/decade-defiance/.

4. WWF. (2021a). Call to action. October 12, 2022, https://deforestation-free.panda.org/call-to-action/.

5. Pendrill, F., Gardner, T. A., Meyfroidt, P., Persson, U. M., Adams, J., Azevedo, T., et al. (2022). Disentangling the numbers behind agriculture-driven tropical deforestation. *Science*, *377*(6611), eabm9267. https://doi.org/10.1126/science.abm9267.

6. Shackleton, C. M., & de Vos, A. (2022). How many people globally actually use non-timber forest products? *Forest Policy and Economics*, *135*, 102659. https://doi.org/10.1016/j.forpol.2021.102659.

7. Curtis, P. G., Slay, C. M., Harris, N. L., Tyukavina, A., & Hansen, M. C. (2018). Classifying drivers of global forest loss. *Science*, *361*(6407), 1108–1111. https://doi.org/10.1126/science.aau3445.

8. Pendrill, F. et al. (2022).

9. NYDF Assessment Partners. (2020).

10. Grantham, H. S., Tibaldeschi, P., Izquierdo, P., Mo, K., Patterson, D. J., Rainey, H., et al. (2021). The Emerging Threat of Extractives Sector to Intact Forest Landscapes. *Frontiers in Forests and Global Change*, *4*. https://www.frontiersin.org/article/10.3389/ffgc.2021.692338.

11. Sy, V. D., Herold, M., Achard, F., Avitabile, V., Baccini, A., Carter, S., et al. (2019). Tropical deforestation drivers and associated carbon emission factors derived from remote sensing data. *Environmental Research Letters*, *14*(9), 094022. https://doi.org/10.1088/1748-9326/ab3dc6.

12. NYDF Assessment Partners. (2020).

13. Sonter, L. J., Herrera, D., Barrett, D. J., Galford, G. L., Moran, C. J., & Soares-Filho, B. S. (2017). Mining drives extensive deforestation in the Brazilian Amazon. *Nature Communications*, *8*(1), 1013. https://doi.org/10.1038/s41467-017-00557-w.

14. *Driving Transformational Change Throughout the Value Chain*. (2022). https://www.theconsumergoodsforum.com/wp-content/uploads/2022/09/2022-CGF-FPC-Annual-Report.pdf.

15. Agricultural Commodity Companies Corporate Statement of Purpose. (2021, November 2). July 18, 2022, https://ukcop26.org/agricultural-commodity-companies-corporate-statement-of-purpose/.

16. WWF. (2021b). *Plowprint Report*. https://www.worldwildlife.org/projects/plowprint-report.

17. Lee, D. & Pistorius, T. (2015). The Impacts of International REDD+ Finance. 44 (2015); Angelsen, A. *et al.* (2018). Conclusions: Lessons for the path to a transformational REDD+. *CIFOR* https://www.cifor.org/knowledge/publication/7076/; Korhonen-Kurki, K. *et al.* (2019). What drives policy change for REDD+? A qualitative comparative analysis of the interplay between institutional and policy arena factors. *Clim. Policy* 19, 315–328. https://www.tandfonline.com/doi/full/10.1080/14693062.2018.1507897

18. NYDF Assessment Partners. (2020).; Larson, A. M., Sarmiento Barletti, J. P., Ravikumar, A., & Korhonen-Kurki, K. (2018, December 1). Multi-level governance: Some coordination problems cannot be solved through coordination. May 18, 2021, https://www.cifor.org/knowledge/publication/7067/, A.M., L., A., L. A., C., M., A., R., J.G., T., L.F., K., et al. (2018). *Can multilevel governance transform business-as-usual trajectories driving deforestation? Lessons for REDD+ and beyond*. https://doi.org/10.17528/cifor/007043. Angelsen, A., Martius, C., de Sy, V., Duchelle, A. E., Larson, A. M., & Pham, T. T. (2018, December 1). Conclusions: Lessons for the path to a transformational REDD+. May 18, 2021, https://www.cifor.org/knowledge/publication/7076/. Korhonen-Kurki, K., Brockhaus, M., Sehring, J., Gregorio, M. D., Assembe-Mvondo, S., Babon, A., et al. (2019). What drives policy change for REDD+? A qualitative comparative analysis of the interplay

between institutional and policy arena factors. *Climate Policy*, *19*(3), 315–328. https://doi.org/10.1080/14693062.2018.1507897.

[19] Angelsen, A., Martius, C., De Sy, V., Duchelle, A. E., Larson, A. M., & Thuy, P. T. (Eds.). (2018). *Transforming REDD+: Lessons and new directions*. Bonn, Germany: Center for International Forestry Research (CIFOR).

[20] Nedopil, C. (2022, March). Countries of the Belt and Road Initiative (BRI). September 16, 2022, https://greenfdc.org/countries-of-the-belt-and-road-initiative-bri/.

[21] UN Environment Programme. (n.d.). The Belt and Road Initiative International Green Development Coalition (BRIGC). https://www.unep.org/regions/asia-and-pacific/regional-initiatives/belt-and-road-initiative-international-green.

[22] Heine, D., Batmanian, G., & Hayde, E. (2021). *Executive Summary* (pp. 1–31). https://www.cif.org/sites/cif_enc/files/knowledge-documents/exexsummary_fiscal_instruments_for_sustainable_forests_.pdf.

[23] Komisi Pemberantasan Korupsi. (2015). *Preventing State Losses in Indonesia's Forestry Sector*. https://acch.kpk.go.id/images/tema/litbang/pengkajian/pdf/Preventing-State-Losses-in-Indonesia-Forestry-Sector-KPK.pdf.

[24] Environment, U. N. (2018). *Assessing Environmental Impacts—A Global Review of Legislation*. UN Environment Nairobi, Kenya.

[25] Maddox, T., Howard, P., Knox, J., & Jenner, N. (2019). *Forest-Smart Mining: Identifying Factors Associated with the Impacts of Large-Scale Mining on Forests*. https://openknowledge.worldbank.org/handle/10986/32025; McKillop, J., & Brown, A. L. (1999). Linking project appraisal and development: the performance of EIA in large-scale mining projects. *Journal of Environmental Assessment Policy and Management*, *01*(04), 407–428. https://doi.org/10.1142/S1464333299000326; Caripis, L. (2017). *Combatting corruption in mining approvals: assessing the risks in 18 resource-rich countries*. https://apo.org.au/node/121931.

[26] PADDDtracker. (n.d.). June 21, 2022, https://www.padddtracker.org.

[27] Portafolio. (2020, July 9). Giros por $37 billones darán vía a 35 obras minero energéticas. *Portafolio.co*. https://www.portafolio.co/economia/giros-por-37-billones-daran-via-a-35-obras-minero-energeticas-542542.

[28] OCMAL. (2020). Honduras. October 14, 2022, https://www.ocmal.org/category/noticias/honduras/.

[29] World Wildlife Fund (WWF). (2018, July 4). DRC Salonga and Virunga Parks, two World Heritage Sites still threatened by oil production. https://wwf.panda.org/wwf_news/?330506/DRC-Salonga-and-Virunga-Parks-two-World-Heritage-Sites-still-threatened-by-oil-production

[30] Vivid Economics & Finance for Biodiversity Initiative. (2021). *Greenness of Stimulus Index* (No. 6th edition). https://www.vivideconomics.com/casestudy/greenness-for-stimulus-index/.

[31] Vuola, M., Korkeakoski, M., Vähäkari, N., Dwyer, M. B., Hogarth, N. J., Kaivo-oja, J., et al. (2020). What is a Green Economy? Review of National-Level Green Economy Policies in Cambodia and Lao PDR. *Sustainability*, *12*(16), 6664. https://doi.org/10.3390/su12166664.

[32] Lessmann, J., Fajardo, J., Muñoz, J., & Bonaccorso, E. (2016). Large expansion of oil industry in the Ecuadorian Amazon: biodiversity vulnerability and conservation alternatives. *Ecology and Evolution*, *6*(14), 4997–5012. https://doi.org/10.1002/ece3.2099.; Valencia, A. (2022, March 14). Ecuador's state oil company looks to double output in five years. *Reuters*. https://www.reuters.com/business/energy/ecuadors-state-oil-company-looks-double-output-five-years-2022-03-11/.

[33] Shyamsundar, P., Ahlroth, S., Kristjanson, P., & Onder, S. (2020). Supporting pathways to prosperity in forest landscapes – A PRIME framework. *World Development*, *125*, 104622. https://doi.org/10.1016/j.worlddev.2019.104622.

[34] World Bank. (2019). *Forest-Smart Mining: Identifying Good and Bad Practices and Policy Responses for Artisanal and Small-Scale Mining in Forest Landscapes*. https://openknowledge.worldbank.org/handle/10986/32026.

[35] Gilmour, D. A. (2016). *Forty years of community-based forestry: a review of its extent and effectiveness*. In *FAO Forestry Paper*: *Vol. 176*. Rome: Food and agriculture organization of the United Nations.; Cummins, A., & Yamaji, E. (2019). To See Invisible Rights: Quantifying Araman informal tenure and its immediate relationship with Social Forestry in Central Java, Indonesia. *Forest and Society*, *3*(2), 193. https://doi.org/10.24259/fs.v3i2.6289; Le Centre pour l'Environnement et le Développement (CED), Forest Peoples Programme (FPP), International Institute for Environment and Development (IIED), l'Association OKANI, & Fern. (n.d.). *La foresterie communautaire au Cameroun : analyse diagnostique des lois, institutions, acteurs et opportunités*. https://www.iied.org/sites/default/files/pdfs/migrate/G04192.pdf; Oldekop, J. A., Sims, K. R. E., Karna, B. K., Whittingham, M. J., & Agrawal, A. (2019). Reductions in deforestation and poverty from decentralized forest management in Nepal. *Nature Sustainability*, *2*(5), 421–428. https://doi.org/10.1038/s41893-019-0277-3.

[36] NYDF Assessment Partners. (2020).

[37] Shyamsundar, P. et al. (2020).

[38] Aggarwal, S., Larson, A., McDermott, C., Katila, P., & Giessen, L. (2021). Tenure reform for better forestry: An unfinished policy agenda. *Forest Policy and Economics*, *123*, 102376. https://doi.org/10.1016/j.forpol.2020.102376.

[39] Aggarwal, S. et al. (2021).

[40] Samii, C., Lisiecki, M., Kulkarni, P., Paler, L., Chavis, L., Snilstveit, B., et al. (2014). Effects of Payment for Environmental Services (PES) on Deforestation and Poverty in Low and Middle Income Countries: A Systematic Review. *Campbell Systematic Reviews*, *10*(1), 1–95. https://doi.org/10.4073/csr.2014.11.

[41] Calculated by Climate Focus using data from Salzman, J., Bennett, G., Carroll, N., Goldstein, A., & Jenkins, M. (2018). The global status and trends of Payments for Ecosystem Services. *Nature Sustainability*, *1*(3), 136–144. https://doi.org/10.1038/s41893-018-0033-0.

[42] Wunder, S., Duchelle, A. E., Sassi, C. de, Sills, E. O., Simonet, G., & Sunderlin, W. D. (2020). REDD+ in Theory and Practice: How Lessons From Local Projects Can Inform Jurisdictional Approaches. *Frontiers in Forests and Global Change*, *3*, 11. https://doi.org/10.3389/ffgc.2020.00011.

[43] Phelps, J., Carrasco, L. R., Webb, E. L., Koh, L. P., & Pascual, U. (2013). Agricultural intensification escalates future conservation costs. *Proceedings of the National Academy of Sciences*, *110*(19), 7601–7606. https://doi.org/10.1073/pnas.1220070110.

[44] NYDF Assessment Partners. (2020). *Balancing forests and development: Addressing infrastructure and extractive industries, promoting sustainable livelihoods*. https://forestdeclaration.org/images/uploads/resource/2020NYDFReport.pdf.; Ribeiro, D. & Garcia Drigo, I. (2020, unpublished). *Public Policies Addressing Deforestation Reduction and Sustainable Production for Small Producers in the Brazilian Amazon: Focused in State of Pará and State of Mato Grosso*.; Bymolt, R., Laven, A., & Tyszler, M. (2018). *Demystifying the Cocoa Sector in Ghana and Côte d'Ivoire*. https://www.kit.nl/wp-content/uploads/2020/05/Demystifying-complete-file.pdf.; Danso-Abbeam, G., & Baiyegunhi, L. J. S. (2020). Technical efficiency and technology gap in Ghana's cocoa industry: accounting for farm heterogeneity. *Applied Economics*, *52*(1), 100–112. https://doi.org/10.1080/00036846.2019.1644439.; Gautam, M., Hayde, E., & Zhang, Y. (2021). *Agriculture, Subsidies, and Forests* (pp. 248–290). https://www.cif.org/sites/cif_enc/files/knowledge-documents/12_agriculture_subsidies_and_forests_web_cra_bl1.pdf.; Hirvonen, K., Machado, E. A., Simons, A. M., & Taraz, V. (2022). More than a safety net: Ethiopia's flagship public works program increases tree cover. *Global Environmental Change*, *75*, 102549. https://doi.org/10.1016/j.gloenvcha.2022.102549.

[45] Garrett, R. D., Gardner, T. A., Morello, T. F., Marchand, S., Barlow, J., Ezzine de Blas, D., et al. (2017). Explaining the persistence of low income and environmentally degrading land uses in the Brazilian Amazon. *Ecology and Society*, *22*(3), art27. https://doi.org/10.5751/ES-09364-220327.

[46] Bakhtary, H., Haupt, F., Luttrell, C., Landholm, D., & Jelsma, I. (2021). *Promoting sustainable oil palm production by independent smallholders in Indonesia: Perspectives from non-state actors*. https://climatefocus.com/publications/promoting-sustainable-oil-palm-production-independent-smallholders-indonesia/; Bakhtary, H., Matson, E., Mikulcak, F., Streck, C., & Thomson, A. (2020). *Company Progress in Engaging Smallholders to Implement Zero-Deforestation Commitments in Cocoa and Palm Oil*. https://climatefocus.com/publications/report-company-progress-engaging-smallholders-implement-zero-deforestation-commitments/.

[47] Schulte, I., Landholm, D. M., Bakhtary, H., Cabezas, S. C., Siantidis, S. M., & Streck, C. (2020). *Supporting smallholder farmers for a sustainable cocoa sector: exploring the motivations and role of farmers in the effective implementation of supply chain sustainability in Ghana and Côte d'Ivoire*. https://www.evidensia.eco/resources/929/supporting-smallholder-farmers-for-a-sustainable-cocoa-sector-exploring-the-motivations-and-role-of-farmers-in-the-effective-implementation-of-supply-chain-sustainability-in-ghana-and-cote-d/.

[48] World Bank. (2019).

[49] World Bank. (2019).

[50] World Bank. (2019).

[51] World Bank. (2019).

[52] Álvarez-Berríos, N., L'Roe, J., & Naughton-Treves, L. (2021). Does formalizing artisanal gold mining mitigate environmental impacts? Deforestation evidence from the Peruvian Amazon. *Environmental Research Letters*, *16*(6), 064052. https://doi.org/10.1088/1748-9326/abede9.

[53] World Bank (2019).

[54] Interview with standard developer. (June 2022).

[55] Global Environment Facility. (2020). *Global Opportunities for Long-term Development of Artisanal and Small-scale Gold Mining (ASGM) Sector Plus - GEF GOLD+ ChildProjects*. https://www.thegef.org/sites/default/files/web-documents/10569_CW_PFD_child_projects.pdf.

[56] Compiled by Climate Focus based on data provided by Global Canopy's Forest 500 and Forest Trends' Supply Change.

[57] Garrett, R. D., Levy, S. A., Gollnow, F., Hodel, L., & Rueda, X. (2021). Have food supply chain policies improved forest conservation and rural livelihoods? A systematic review. *Environmental Research Letters*, *16*(3), 033002. https://doi.org/10.1088/1748-9326/abe0ed.

[58] World Cocoa Foundation. (2022). Cocoa & Forests Initiative. https://www.worldcocoafoundation.org/initiative/cocoa-forests-initiative/.

[59] zu Ermgassen, E. K. H. J., Ayre, B., Godar, J., Bastos ima, M. G., Bauch, S., Garrett, R., et al. (2020). Using supply chain data to monitor zero deforestation commitments: an assessment of progress in the Brazilian soy sector. *Environmental Research Letters*, *15*(3), 035003. https://doi.org/10.1088/1748-9326/ab6497.

[60] Inakake de Souza, L., Piatto, M., Couto, M., & Guidotti de Faria, V. (2016). *10-Year Soy Moratorium in the Amazon: History, Impacts and Expansion into Cerrado Areas*.

https://www.imaflora.org/public/media/biblioteca/IMF-10-years-of-soy-moratorium-WB.pdf.

61. Inakake de Souza, L. et al. (2016).

62. Inakake de Souza, L. et al. (2016).

63. Associação Brasileira das Indústias de Ólease Vegetais (ABIOVE). (2021). *Soy Moratorium: Crop Year 2019/20 - Monitoring Soy Through Satellite Images in the Amazon Biome*. https://abiove.org.br/wp-content/uploads/2021/07/Soy_Moratorium_Report_2019_20.pdf.

64. Institute of Agricultural and Forest Management and Certification - Imaflora. (2016). *10-year of Soy Moratorium in the Amazon: History, Impacts and Expansion into Cerrado Areas*. https://www.imaflora.org/public/media/biblioteca/IMF-10-years-of-soy-moratorium-WB.pdf.

65. Malan, S. (2021). *How to Advance Sustainable Mining* (No. Brief #26). https://www.iisd.org/articles/deep-dive/how-advance-sustainable-mining.

66. Responsible Mining Foundation. (2022). *Closing the gaps*. https://www.responsibleminingfoundation.org/closing-the-gaps/.

67. Franken, G., & Schütte, P. (2022). Current trends in addressing environmental and social risks in mining and mineral supply chains by regulatory and voluntary approaches. *Mineral Economics*. https://doi.org/10.1007/s13563-022-00309-3.

68. Franken, G., & Schütte, P. (2022).

69. Franken, G., & Schütte, P. (2022).

70. Salamon, L. M., & Sokolowski, S. W. (2016). Beyond Nonprofits: Re-conceptualizing the Third Sector. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, *27*(4), 1515–1545. https://doi.org/10.1007/s11266-016-9726-z.

71. Maiese, M. (2003, October). Grassroots Actors. https://www.beyondintractability.org/essay/grassroots.

72. Birchall, D. (2020). The Role of Civil Society and Human Rights Defenders in Corporate Accountability. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3566318.

73. Laiti, J., & Carl, F. (2022, May 24). How climate solutions promoted by Western governments avoid what needs to be done. https://wagingnonviolence.org/rs/2022/05/indigenous-sami-people-gallok-mine-false-climate-solutions/.

74. Laiti, J., & Carl, F. (2022, May 24).

75. Persson, S., Harnesk, D., & Islar, M. (2017). What local people? Examining the Gállok mining conflict and the rights of the Sámi population in terms of justice and power. *Geoforum*, *86*, 20–29.

76. UN Human Rights - Office of the High Commissioner. (2022, February 10). Sweden: Open pit mine will endanger indigenous lands and the environment – UN experts. September 23, 2022, https://www.ohchr.org/en/press-releases/2022/02/sweden-open-pit-mine-will-endanger-indigenous-lands-and-environment-un.

77. Ministry of Enterprise and Innovation. (2022, March 28). Information about the decision on an exploitation concession for Kallak K no 1. September 23, 2022, https://www.government.se/articles/2022/03/information-about-the-decision-on-an-exploitation-concession-for-kallak-k-no-1/.

78. Rainforest Foundation US. (2022, May 16). A Push to Enshrine Greater Rights for Guyana's Indigenous Peoples. https://rainforestfoundation.org/greater-rights-for-guyanas-indigenous-peoples/.

79. Rainforest Foundation US. (2022, May 16).

80. Henry, Z. (2022, August 21). VP Jagdeo blames junior level officials for not acting accordingly in Chinese Landing fiasco. September 23, 2022, https://www.kaieteurnewsonline.com/2022/08/21/vp-jagdeo-blames-junior-level-officials-for-not-acting-accordingly-in-chinese-landing-fiasco/.

81. IACHR recommends "full reparations" by state to Isseneru villagers for human rights violations. (2022, April 28). https://www.stabroeknews.com/2022/04/28/news/guyana/iachr-recommends-full-reparations-by-state-to-isseneru-villagers-for-human-rights-violations/.

82. Henry, Z. (2022, August 21).

83. Sax, S., & Angelo, M. (2020, January 13). Communities in Brazilian Cerrado besieged by global demand for soy. *Mongabay Environmental News*. https://news.mongabay.com/2020/01/communities-in-brazilian-cerrado-besieged-by-global-demand-for-soy/.

84. Angelo, M. (2019, November 27). Brazil investigates agribusiness bribes to judges for favorable land rulings. *Mongabay Environmental News*. https://news.mongabay.com/2019/11/brazil-investigates-agribusiness-bribes-to-judges-for-favorable-land-rulings/.; EJAtlas. (2020, August 31). Geraizeira communities against land enclosure through Fazenda Estrondo, Bahia, Brazil | EJAtlas. October 14, 2022, https://ejatlas.org/conflict/soy-expansion-and-violent-land-grabbing-at-fazenda-estrondo-bahia-brazil.

85. Sax, S., & Angelo, M. (2020, January 13).

86. Sax, S., & Angelo, M. (2020, January 13).

87. Scheidel, A., Del Bene, D., Liu, J., Navas, G., Mingorría, S., Demaria, F., et al. (2020). Environmental conflicts and defenders: A global overview. *Global Environmental Change*, *63*, 102104. https://doi.org/10.1016/j.gloenvcha.2020.102104.

88. Scheidel, A. et al. (2020).

89. Temper, L., Avila, S., Bene, D. D., Gobby, J., Kosoy, N., Billon, P. L., et al. (2020). Movements shaping climate futures: A systematic mapping of protests against fossil fuel and low-carbon energy projects. *Environmental Research Letters*, *15*(12), 123004. https://doi.org/10.1088/1748-9326/abc197.

90. Scheidel, A. et al. (2020).

91. Scheidel, A. et al. (2020).

[92] Global Witness. (2022). *Decade of defiance*. https://www.globalwitness.org/en/campaigns/environmental-activists/decade-defiance/.

[93] Quijano Vallejos, P., Veit, P., Tipula, P., & Reytar, K. (2020). *Undermining Rights: Indigenous Lands and Mining in the Amazon*. https://www.wri.org/research/undermining-rights-indigenous-lands-and-mining-amazon; Brockovich, E. (2022, February 8). This lawyer should be world-famous for his battle with Chevron – but he's in jail. *The Guardian*. https://www.theguardian.com/commentisfree/2022/feb/08/chevron-amazon-ecuador-steven-donziger-erin-brockovich.

[94] Pinchetti, S. (2021, October 18). Indigenous Peoples File Lawsuit Against Ecuador's President To Halt New Extractive Conquest in the Amazon, Threatening Indigenous Sovereignty & Our Climate. October 14, 2022, https://amazonfrontlines.org/chronicles/ecuador-indigenous-lawsuit-lasso-decrees-oil-mining/.

[95] Koenig, K. (2022, February 15). Indigenous Rights Victories Deal a Major Blow to Oil and Mining Expansion. September 7, 2022, https://amazonwatch.org/news/2022/0215-indigenous-rights-victories-at-ecuadors-high-court-deal-blow-to-governments-plans-to-expand-oil-and-mining.

[96] Fox, M. (2022, June 21). 'We are here with one idea, one heart': Ecuador's Indigenous groups rally for rights in mass protests. *The World*. https://theworld.org/stories/2022-06-21/we-are-here-one-idea-one-heart-ecuador-s-indigenous-groups-rally-rights-mass.

[97] Valencia, A. (2022, September 8). Ecuador reaches preliminary deals on oil, mining with indigenous groups. *Reuters*. https://www.reuters.com/world/americas/negotiations-with-indigenous-groups-test-ecuadors-government-2022-09-07/.

[98] Dawson, N., Coolsaet, B., Sterling, E., Loveridge, R., Gross-Camp, Nicole D., Wongbusarakum, S., et al. (2021). The role of Indigenous peoples and local communities in effective and equitable conservation. *Ecology and Society*, *26*(3). https://doi.org/10.5751/ES-12625-260319.

[99] World Resources Institute & Climate Focus. (2022). *Sink or swim: How Indigenous and community lands can make or break nationally determined contributions*. https://forestdeclaration.org/resources/sink-or-swim/.

[100] World Resources Institute & Climate Focus. (2022).

[101] Gordon, D., & Allan, C. (2019). *Closing Civil Society Space: What Environmental Funders Need to Know*. https://www.greengrants.org/wp-content/uploads/2019/02/Closing-Civil-Society-Space-What-Environmental-Funders-Need-to-Know.pdf.

[102] Nepstad, D. C., Boyd, W., Stickler, C. M., Bezerra, T., & Azevedo, A. A. (2013). Responding to climate change and the global land crisis: REDD+, market transformation and low-emissions rural development. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *368*(1619), 20120167. https://doi.org/10.1098/rstb.2012.0167. Nepstad, D. C. et al. (2013).

[103] von Essen, M., & Lambin, E. F. (2021). Jurisdictional approaches to sustainable resource use. *Frontiers in Ecology and the Environment*, *19*(3), 159–167. https://doi.org/10.1002/fee.2299.

[104] Stickler, C., Duchelle, A., Ardila, J. P., Nepstad, D., David, O., Chan, C., et al. (2018). *The State of Jurisdictional Sustainability: Synthesis for practitioners and policymakers*. https://www.cifor.org/knowledge/publication/6999/.

[105] DiGiano, M., Stickler, C., & David, O. (2020). How Can Jurisdictional Approaches to Sustainability Protect and Enhance the Rights and Livelihoods of Indigenous Peoples and Local Communities? *Frontiers in Forests and Global Change*, *3*, 40. https://doi.org/10.3389/ffgc.2020.00040.

[106] Larson, A., Sarmiento Barletti, J. P., et al. (2018).; Larson, A., Libert-Amico, A., Martius, C., Ravikumar, A., Gonzales Tovar, J., Kowler, L., Rodríguez-Ward, D., et al. (2018).

[107] Good Growth Partnership. (2022). *Reducing Deforestation from Commodity Supply Chains: Lessons and recommendations on an Integrated Approach from the Good Growth Partnership*. https://goodgrowthpartnership.com/wp-content/uploads/Reducing-deforestation-GGP-Integrated-Approach-.pdf.

# Acknowledgments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Shivani Desai, Melaina Dyck, Jana Elbrecht, Alan Ichilevici de Oliveira, Estelle Levin-Nally, Blanca Racionero-Gomez, and Leah Samberg

We would also like to thank the following people for their valuable insights and review:

Adrienne Brown, Frederik Buchholz, Louisa Conzen, Annabelle Dodson, Akiva Fishman, Taiji Fujisaki, Chloe Ginsburg, Hermine Kleymann, Moritz Kramer, David McLaughlin, Norma Mercedes Pedroza Arceo, Hugo Rosa da Conceicao, Veronica Robledo Vallejo, Anna Rynearson, Claire Salisbury, Tomasz Sawicki, Emma Thomson, Jean Timmers, Viera Ukropcova, and Brittany Williams

## DESIGN AND FIGURES

Elisa Perpignan, Sara Cottle, and Ivan Palmegiani

## COPY EDITOR

Melaina Dyck

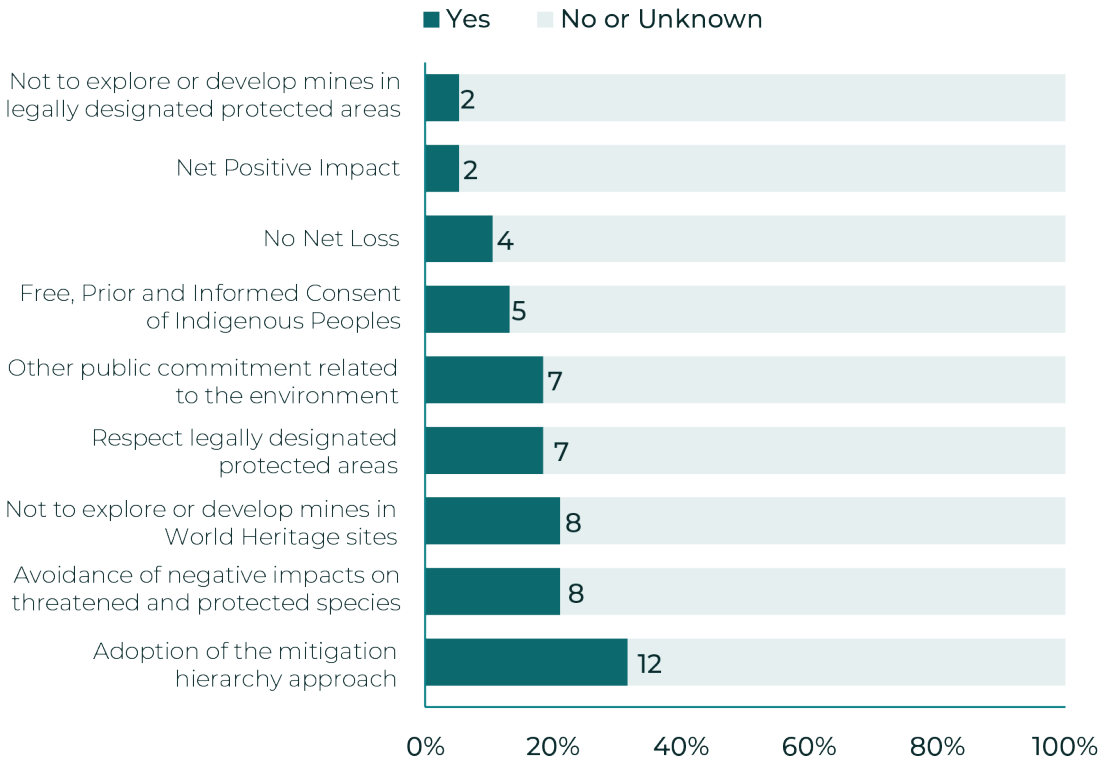

## CITATION

Please use the following citation when referencing the findings presented in this brief:

> Forest Declaration Assessment Partners. (2022). Sustainable production and development: Theme 2 assessment. *Forest Declaration Assessment: Are we on track for 2030?* Climate Focus (coordinator and editor). Accessible at www.forestdeclaration.org.

# Annex

**Figure A. Scope and type of public commitments out of 38 mining and coal extractive companies reporting through CDP in 2021**




Source: CDP analysis of self-reported and disclosed mining company data in 2021

**Table A. Selection of prominent sustainability schemes targeting the mining sector** (Adapted from Franken, G., & Schütte, P. (2022))

| Supply chain target | Sustainability scheme | # of top-20 companies adopting | Relevance for forests |
|---|---|---|---|
| *For mining and processing only* | The International Council on Mining and Metals (ICMM)'s Mining Principles | 12 | Under the Biodiversity Principle, companies are expected to avoid World Heritage Sites and respect legally designated protected areas; and to apply the mitigation hierarchy to assess and address risks and impacts to biodiversity and ecosystem services, aiming to achieve no net loss of biodiversity. |
| | Mining Association of Canada (MAC)'s Toward Sustainable Mining (TSM) | 7 | TSM includes a Biodiversity Conservation Management Protocol that sets out expectations for mining companies member to the Association with respect to conserving biodiversity and seeks to confirm that mining facilities have made formal commitments to manage biodiversity at their mine sites, using the mitigation hierarchy. |
| | Initiative for Responsible Mining Assurance (IRMA) Standard for Responsible Mining | 2 | IRMA provides a list of "Critical Requirements" that mining sites must meet to achieve so-called "IRMA 50" and "IRMA 75" certified levels as part of a stepwise onboarding process for companies. Under the critical requirements, companies need to conduct social and environmental impact assessments that cover the direct, indirect, and cumulative impacts on biodiversity, ecosystem services, and protected areas, accompanied by a mitigation and minimization plan, and ensure FPIC of Indigenous Peoples and/or evidence of positive relationships with IPs and LCs and remedies for past impacts. |
| *For the upstream supply chain* | ResponsibleSteel Standard | 3 | The ResponsibleSteelə International Standard V2.0 launched in 2022, incorporating additional requirements on GHG emissions and the sourcing of input materials. Principle 13 of the standard requires sites to assess their risk and impact on biodiversity in their area of influence and to implement a plan, in line with the mitigation hierarchy, to manage these risks and impacts, aiming for no net loss. |
| *For the whole supply chain (mine to product manufacturing)* | International Finance Corporation (IFC)'s Performance Standards | -- | The eight Performance Standards cover social, environmental, health, and other standards that must be met throughout the life cycle of the investment. Performance Standard 6 requries consideration of direct and *indirect* project-related impacts on biodiversity and ecosystem services. In the context of biodiversity threats and impacts to ecosystem services, special focus should rest on habitat loss; degradation and fragmentation; invasive alien species; overexploitation; hydrological changes; nutrient loading; and pollution. |
| | Responsible Jewelry Council (RJC)'s Code of Practices | -- | The Code of Practices states that impact assessments shall collectively assess "environmental, social and human rights impacts, including but not limited to impacts on biodiversity and ecosystem services, labor, and employment, gender, health and conflict. This includes cumulative and indirect impacts. |
| | Aluminum Stewardship Initiative (ASI) Performance Standard | 2 | The ASI Performance Standard V3 (2022) defines environmental, social and governance principles and criteria for the aluminum value chain. The standard requires companies to assess and mitigate the biodiversity and ecosystem services impacts of their operations within their area of influence, including indirect project impacts on biodiversity or on ecosystem services upon which affected Communities' livelihoods are dependent. It also requires sites to conduct and environmental and social impact assessment and to implement a management plan in line with the mitigation hierarchy. |

# Finance for forests

## Theme 3 Assessment

THEME 3

**FOREST FINANCE**

Theme 3 provides an overview of forest finance and forest goals; updates on available data and recent policies to channel finance to the forest sector; and an assessment of the role of public and private finance, and carbon markets for forest finance. It assesses how progress in the past year has advanced the 2030 global forest goals; the extent to which current finance is sufficient for meeting these goals, and where gaps remain. It also explores new forest finance-related areas, including public sector governance mechanisms, and direct finance mechanisms for Indigenous Peoples and local communities. This report builds on previous NYDF Progress Assessments of Goal 7, and Goals 8 & 9.

# Key Messages

Finance for forests is not on track to meet global goals to halt and reverse deforestation by 2030. It will cost up to USD 460 billion per year to protect, restore, and enhance forests on a global scale. Currently, domestic and international mitigation finance for forests averages USD 2.3 billion per year—less than 1 percent of the necessary total. For comparison, total finance for climate, from both public and private sources, reached USD 632 billion in 2019-20.

Funding for forests will need to increase by up to 200 times to meet 2030 goals. This funding does not need to come just from philanthropic donations or public sector development assistance—a wide range of financial mechanisms can support forest goals if they are properly designed, including domestic budgets and fiscal policies, private investments, blended and de-risked finance, grants or loans, readiness and capacity building support, and results-based payments.

Finance pledges made in 2021 demonstrate a substantial increase in ambition to meet 2030 forest goals. If they are fully delivered, they would quadruple annual finance for forests from 2021-25 to USD 9.5 billion. Yet, funding would still need to increase by up to 50 times to meet investment needs. One year on from these pledges, it is not yet possible to directly assess their progress because most have yet to publicly disclose their implementation efforts. However, available data does not yet show an increase in funding corresponding to pledges made at COP26 in November 2021.

From 2010-20, governments committed USD 25.3 billion of domestic and international public funding to protect and conserve forests—financing committed with a stated forest objective, or under REDD+ strategies. Flows have increased since 2010, with a significant period of growth between 2016-19. In 2020, however, finance flows fell by almost half, likely due to countries' changing budget priorities in the COVID-19 pandemic. Even at its height, finance aligned with forest goals paled in comparison to domestic and international "grey" (potentially harmful) finance flows to agriculture and forest sectors). From 2010-20, grey investments by the public sector totaled at least USD 257 billion in domestic finance and USD 13 billion in international finance.

Indigenous Peoples and local communities (IPs and LCs), who are the most effective stewards and guardians of their forest territories, receive far less funding than their estimated finance needs for securing tenure rights and preserving forest ecosystems. Only 1.4 percent of total public climate finance in 2019-20 was targeted toward IPs and LC's needs, and only 3 percent of the financial need for transformational tenure reform is being met annually.

Private sector actors—companies, financial institutions, and philanthropies—have not yet leveraged their significant power to steer development and commodity production onto a sustainable trajectory in line with forest goals. Most financial institutions still fail to have any deforestation safeguards for their investments. Almost two thirds of the 150 major financial players most exposed to deforestation do not yet have a single deforestation policy covering their forest-risk investments, leaving USD 2.6 trillion in investments in high deforestation-risk commodities without appropriate safeguards.

Demand for nature-based carbon credits in the voluntary carbon market has grown significantly, driven primarily by interest from companies. The volume of carbon credits traded in the voluntary carbon markets grew by 89 percent in 2021, with 45 percent of all credits issued coming from forestry and land use projects. On the other hand, only 10 percent of the carbon credits issued in compliance markets in 2021 came from schemes that allow carbon credit use from forests. The average price of forest carbon credits in 2021 was between USD 4.7 and 15 per ton of $CO_2$, well below the price needed to meet the Paris Agreement's target of limiting global warming to 1.5 °C. Overall, the contribution of carbon market finance is still minor compared to other green finance sources

# Recommendations

Despite the price tag for protecting and restoring forests on a global scale—up to USD 460 billion per year—this is an investment that we cannot afford not to make. Achieving the 2030 forest goals is essential for ensuring a livable world in line with the Paris Agreement. Governments, financial institutions, companies, and philanthropies must step up to increase and align their spending and investments with forest maintenance and restoration goals.

The Forest Declaration Assessment Partners call on governments, companies, and financial institutions to utilize all tools at hand to substantially increase their investments in forests, while also shifting finance away from harmful activities.

The Assessment Partners urge those who make forest finance commitments—including endorsers of the Glasgow Leaders' Declaration—to collaborate with impacted communities to design their pledges, and to pair these pledges with transparent and timebound interim milestones and public reporting on disbursements, effectiveness of funding, and alignment of finance flows with forest goals. Commitment makers should detail what share of the pledged finance is additional versus preexisting planned funding and should clarify how, when, and where this finance will be spent. Evaluation mechanisms must be put in place to enable donors and communities to assess the impacts of disbursed finance and allow for needed adjustments. Inclusive and transparent processes are essential to understand how pledged finance compares to needs and can help guide and improve the impact of future investments, as well as help hold actors to account on their commitments. The management and governance of finance for forests must be developed in partnership with local implementing organizations to ensure that disbursed finance achieves its objectives.

All financial actors, including governments, financial institutions, companies, and philanthropies, must make every effort to support the involvement of IPs and LCs in forest and finance decision-making. Public and private actors must facilitate the flow of finance to IPs and LCs to better enable them to carry out forest-protection and conservation activities. Governments, multilateral institutions, and private foundations should prioritize the establishment of new and direct finance mechanisms for these activities and should codesign these mechanisms with IP and LC groups. Increased coordination and cooperation between donors, NGOs, and IPs and LCs can help to build trust and guide the most appropriate interventions. Public and private financiers must also reduce administrative and technical burdens and provide capacity building for IP and LC groups to receive and manage funds directly. Where intermediaries are necessary, organizations trusted by IPs and LCs should be prioritized.

Public sector actors must take concrete and far-reaching steps to implement and expand their finance commitments and align fiscal and financial policies with forest goals, including:

- Incorporate forest risks and impacts into public budgeting frameworks. Governments must assess the potential impact of public financial and fiscal decisions on forests and direct finance toward activities that present the least risk and most benefits to forests. Safeguard measures must be put in place when needed.
- Seize every opportunity to redirect harmful agricultural subsidies and other incentives (domestic and international) that drive deforestation and forest degradation. Governments should work to identify which subsidies lead to adverse forest impacts and, to the maximum extent possible while ensuring just and equitable outcomes, redirect and repurpose these subsidies, either by making financial support conditional upon achieving environmental objectives, or by channeling finance directly into deforestation-free incentive programs.

- Employ blended financing tools to leverage private sector finance for forest protection. Implement policies and instruments which can help to de-risk private investments to create an enabling environment for private finance.

Financial institutions and companies across sectors must recognize and act on the inherent business risks presented by deforestation and forest degradation and put in place measures and policies to combat this risk, including:

- Develop a full understanding of the company or institution's exposure and contribution to climate- and forest-related risks and impacts (in the short, medium, and long term).
- Incorporate processes for assessing climate- and forest-related risks into existing risk management processes. This includes processes for identifying, managing, and mitigating risks, utilizing frameworks like the Taskforce on Nature-related Financial Disclosure (TNFD) Nature-Related Risk & Opportunity Management and Disclosure Framework.
- Move from voluntary to mandatory disclosure of forest-related risks and progress against pledges to increase transparency and allow investors to reconsider their capital allocation decisions. Disclosure platforms such as CDP can support increased transparency, while Global Canopy's Deforestation-Free Finance Roadmap can provide practical guidance on developing a deforestation-free strategy.[a]
- Implement standards and policies that actively promote green investments and lending to forest conservation-oriented land sector businesses.
- Prioritize investments aligned with and synergetic with forest goals, applying the mitigation hierarchy to all investment decisions. Limit the volume of private finance flowing to activities that have a detrimental impact on forests.

Where private sector actors choose to invest in nature conservation and restoration, they must ensure that they are supporting high-quality and high-integrity interventions in line with the mitigation hierarchy and science-based targets. This could include market-based options, such as participation in carbon markets with forest- and land-based credits, or non-market-based options such as support for implementation of jurisdictional or landscape scale sustainability activities. Actions to achieve this goal include:

- Invest in landscape finance for forest protection activities that holistically address the major drivers of deforestation, conversion, and land degradation, both market and non-market based. One such example is support of multi-stakeholder platforms that can promote constituency building, strategic planning, mapping, and project development.
- When using forest-based carbon credits to meet one's internal climate mitigation targets, use forest-based carbon credits to compensate for residual emissions only after first prioritizing emissions reductions within the actor's internal operations. In addition, consider investing in forest-based carbon credits as part of strategies to achieve societal decarbonization beyond companies' own value chains.
- In making purchasing decisions, prioritize 1) crediting standards that meet essential social and environmental integrity criteria, 2) high-quality credits from jurisdictional REDD+ programs 3) projects that are nested within high-quality jurisdictional REDD+ programs, and 4) credits from other high-quality projects and programs that reduce threats to standing tropical forests.
- Develop, scale up, and adopt governance frameworks which establish rules for public and private use of, and claims about, carbon credits.

[a] See Global Canopy: Deforestation Free Finance. https://guidance.globalcanopy.org/roadmap/.

# Introduction

## 1. Why look at forest finance?

Achieving international forest goals requires substantial public and private investments to address the drivers of deforestation, and to manage and restore forests sustainably. Mitigating environmental impacts on landscapes and agricultural systems requires profound changes to economic and legal systems. Without both enforcement and compensation mechanisms, forests will continue to be worth more to users cleared than standing—especially in the short term.

Estimates suggest that it will cost up to USD 460 billion per year to reduce deforestation and implement restoration and sustainable forest management at a sufficient scale to protect and restore forests globally.[1,b] This funding must be met through both public and private finance.

Reaching forest goals not only requires more finance earmarked for forest activities—referred to in this report as "green finance"—but also shifting finance away from investments in potentially harmful activities—called "grey finance"—toward sustainable actions. Aligning finance flows may be done, for instance, through requiring environmental safeguards to be in place before awarding finance or redirecting investments to conservation and sustainable production.

## 2. What has been pledged on forest finance?

A range of recent international finance pledges, including those made at COP26, raise global ambition for progress (**Table 1**). The total amount of quantitative pledges by governments, financial institutions, companies, and foundations amounts to USD 36.2 billion between 2021-25—or on average USD 7.2 billion per year[c]. It is also not clear how quantitative targets relate to previous pledges—i.e., whether these pledges provide additional funding. Several pledges have only defined qualitative targets, such as aligning existing finance or to broader forest protection goals globally or in specific geographies. Only one of the pledges has been realized: the LEAF Coalition mobilized USD 1 billion in finance by the end of 2021, although it is unclear how much, if any, of these funds have been disbursed.

While many pledges plan or have already implemented some form of reporting mechanism, most have not yet publicly disclosed their progress. The Global Forest Finance Pledge and the Congo Basin Joint Donor statement have not provided any public information about how progress will be reported. The extent to which these pledges can provide a baseline for tracking progress is also limited. Many do not set clear, measurable targets, or are not transparent about the targets in the first place or about contributions from different pledges.

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[b] Climate Focus calculation based on multiple sources. No one source provides an estimate of the total need for forests globally across the whole package of interventions (reducing deforestation, restoration, A/R, and sustainable forest management). The upper bound considers estimations of the finance need for reducing deforestation by 45 percent by 2050 (USD 180 billion per year) and A/R, silvopasture, mangrove, and peatland restoration (USD 280 billion per year). The lower bound is based on the lowest estimate we found of additional financing needed for forest restoration, REDD+, and forest management (USD 45–65 billion per year). However, this lower bound does not include A/R and is therefore likely an underestimate. Note that the sources used to produce this range risk overlap. See NYDF (2021) Taking stock of national climate action for forests: 2021 NYDF Assessment Report. Technical Annex. https://forestdeclaration.org/resources/taking-stock-of-national-climate-action-for-forests/

[c] Climate Focus calculation based on sum of finance pledges announced at COP26, assuming no overlap between different pledges.

**Table 1. Examples of pledges and other initiatives related to finance for forests**

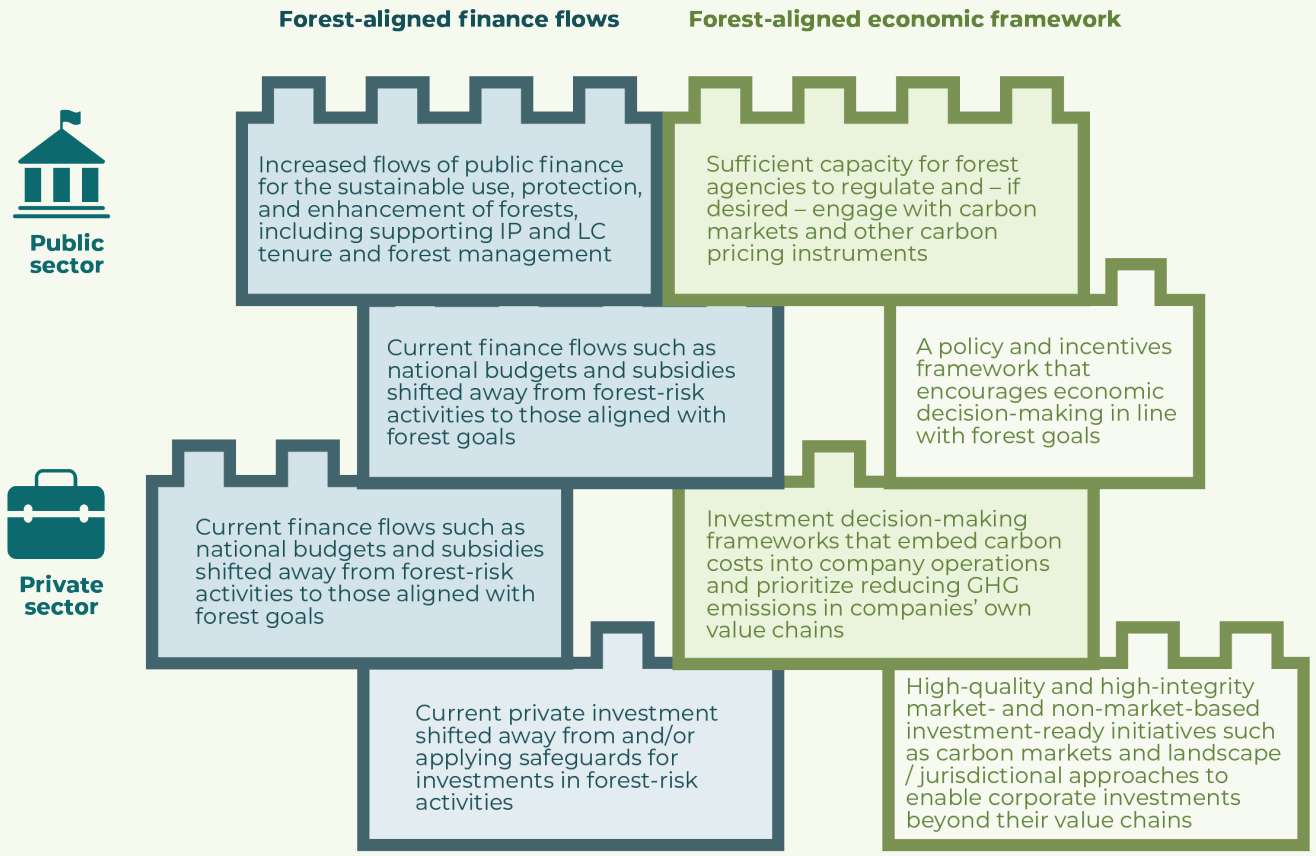
| Pledge or Initiative | Description | Intermediate targets and progress reporting | Final target |
|---|---|---|---|
| Lowering Emissions by Accelerating Forest (LEAF) Coalition (2021) | This public-private coalition of governments and international companies seeks to mobilize finance for Emissions Reductions in tropical forests at a floor price of USD 10 per ton of $CO_2$ equivalent. | By 2021, mobilize USD 1 billion (target met). | Not defined. |
| Congo Basin Joint Donor Statement (2021) | 11 countries (with representation from Europe, North America, and East Asia) and one philanthropic organization pledged at least USD 1.5 billion of public and private finance from 2021-2025 to support protection of the Congo Basin ecosystems | No information provided. | By 2025, mobilize USD 1.5 billion of public and private finance Basin ecosystems. |
| Finance Sector Roadmap for Eliminating Commodity-Driven Deforestation (2022) | The Roadmap provides recommendations for financial institutions to eliminate commodity-driven deforestation, conversion, and associated human rights abuses from their portfolio by 2025. It was developed to make practical guidance available to the array of financial institutions committing to the Financial Sector Commitment on Eliminating Agricultural Commodity-Driven Deforestation, made at COP26. | The Roadmap requires annual reporting by financial institutions starting in 2023. A first report on joint progress will be published in 2022. | Zero commodity-driven deforestation in financial portfolios by 2025. |
| Financial Sector Commitment Letter (2021) | 33 financial institutions, mostly from Europe and North America, committed to eliminate commodity-driven deforestation from investment and lending portfolios by 2025 | By 2022, assess deforestation risk in investment and lending portfolio.<br><br>By 2023, disclose deforestation risk and mitigation activities in portfolios.<br><br>By 2025, publicly report credible progress, aligned with peers, on the milestones. | By 2025, make best efforts to eliminate commodity-driven deforestation from portfolios and only provide finance to clients that have met risk-reduction criteria and increase investment in nature-based solutions. |

| | | | |
|---|---|---|---|
| Global Forest Finance Pledge (2021) | 12 countries pledged USD12 billion for forest-related climate finance between 2021-2025. These will be delivered through funding for results-based payments, technical and financial cooperation for capacity building, as well as other activities that support and strengthen governance, supply chain initiatives, financial markets and investments, restoration and conservation, and efforts to combat forest crimes and fires. | No information provided. | USD 12 billion by 2025. |
| IPLC Forest Tenure Joint Donor Statement (2021) | 23 countries and philanthropic organizations pledged USD 1.7 billion of public and private finance in the period 2021-2025 for strengthening IP and LC tenure rights and IPs and LCs' role as guardians of forests and nature. | The signatories will annually report on the pledge progress, including updates on how funds are being spent. The first report will be published at COP 27. | USD 1.7 billion by 2025. |
| Lowering Emissions by Accelerating Forest (LEAF) Coalition (2021) | This public-private coalition of governments and international companies seeks to mobilize finance for Emissions Reductions in tropical forests at a floor price of USD 10 per ton of $CO_2$ equivalent. | By 2021, mobilize USD 1 billion (target met). | Not defined. |
| Natural Capital Investment Alliance (2021) | 15 finance institutions from Europe and Australia are members of this group which seeks to mobilize aggregated finance through investment products aligned with Natural Capital themes. | The website provides regular updates on individual institutions' progress. Most of the activities reported are currently in a planning stage. | By 2022, mobilize at least USD 10 billion. |

## 3. How does this report assess progress?

This report assesses the extent to which global public and private finance is aligned with forest goals. The goal for Theme 3 is to exponentially increase investments in forests, as well as avoid or mitigate the impacts of harmful investments. Under the Paris Agreement, parties committed to making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development (Art.2.1.c).[2] The building blocks to successfully achieve the objectives of Theme 3—which are similar for both public and private finance—are described in **Figure 1**. Other essential elements for supporting a transition to forest-aligned finance—such as strengthening forest governance and building forest-risk assessment capacity—are covered in other Assessment reports in this series (Theme 4 on Forest governance and Theme 2 on Sustainable production and development).

**Figure 1. Building blocks for progress on forest finance**




This report reflects previous approaches taken for the finance-related goals of the NYDF (8 & 9); relying predominantly on publicly available finance datasets: largely OECD and FAOSTAT. We also rely on existing data analysis from Forest Declaration Assessment Partners, including Global Canopy's Forest 500 and Forest Trends' Ecosystem Marketplace. Where quantitative data is unavailable, the report relies on qualitative research complemented by anecdotal examples from country-level assessments that have also been conducted under this year's Forest Declaration Assessment.[d]

Overall, flows of finance to forests globally are poorly tracked, are difficult to quantify, and are therefore not fully captured in this assessment. Total finance volumes remain difficult to track, due to poor transparency as well as a lack of global standards for tracking climate-related mitigation finance. This absence of standards also creates a risk of overlap, resulting from the way different sources define finance flows. Limited data availability also remains a significant problem for grey finance estimates, particularly from domestic sources. However, there is a move to improve reporting infrastructure. Starting this year, financial institutions can disclose to CDP on forests-related portfolio exposures, risks, and opportunities.[3]

Though this report aims to assess progress globally, it contains relatively more information on tropical forests and developing countries, in part due to a trend in available data and literature. Future assessments will continue to aim for more comprehensive coverage globally.

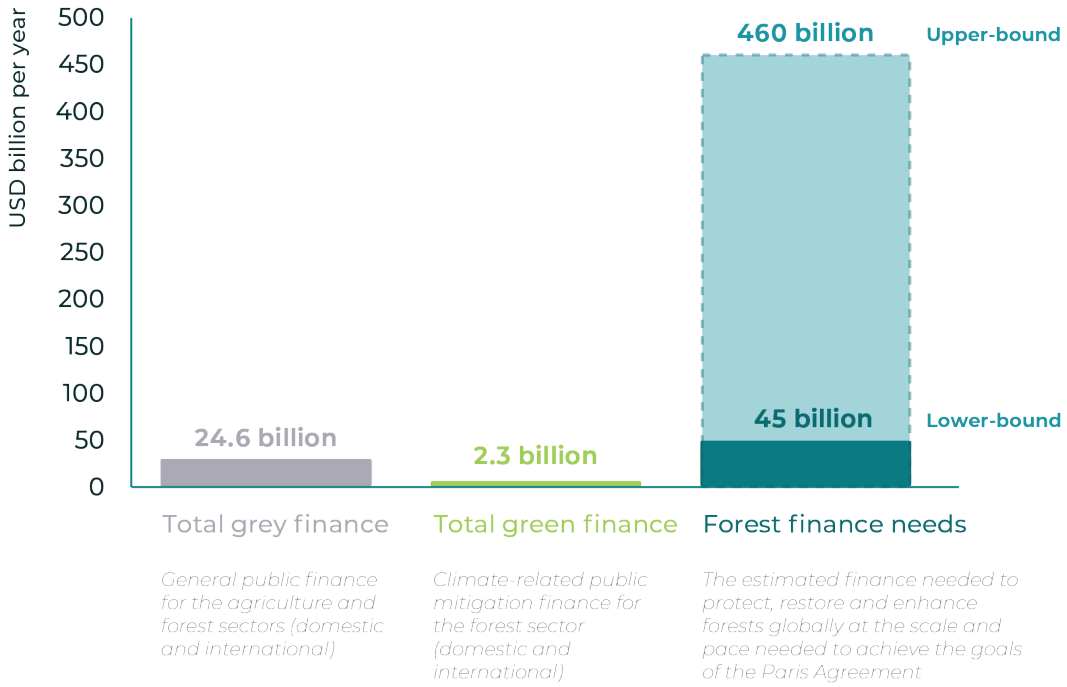
[d] The 13 countries assessed this year include: Cambodia, Cameroon, Canada, Colombia, Democratic Republic of the Congo, Dominica, Ecuador, Gabon, Indonesia, Kenya, Liberia, Republic of the Congo, and Vietnam.

# Findings

Insufficient financing has been committed to the forest sector, while much larger levels of public finance still flow to activities that risk directly or indirectly supporting forest destruction and degradation. In the landscape of climate finance, funding to forest activities is far less than funding channeled to other mitigation sectors with equal or lower estimated mitigation potential.

Business-as-usual grey finance for agriculture and forest activities far outweigh green finance. Currently, domestic and international mitigation finance for forests averages USD 2.3 billion per year between 2020-22—less than 1 percent of the total necessary financing. For comparison, between 2010-20, grey public finance flows were estimated to total just over USD 270 billion: USD 257 billion in domestic finance and USD 13.4 billion in international finance. [e,f] Almost 20 percent of total grey finance flows were provided to or in high deforestation countries.[g] On average, grey public finance outweighs green public finance at a ratio of over 10:1.

**Figure 2. Grey and green public finance, compared against total costs to protect and restore forests, in billion USD per year**




[e] See sections 2.1.1 and 2.1.2 for a breakdown of these figures.

[f] Climate Focus analysis. *Domestic finance* includes government expenditure on the agriculture and forestry sectors, in the 41 countries covered by FAOSTAT data. Cumulative 2010-2020. Note that this is likely to be a significant underestimate, given the high number of missing countries. *International finance* includes the international development finance commitments of the 142 countries reported in the OECD Creditor Reporting System database. Finance flows included are: *Agricultural development; Agricultural inputs; Food crop production; Industrial crops/export crops; Livestock; Agrarian reform; Agricultural services; Livestock/veterinary services; Forest industries.* Cumulative 2010-2020.

[g] Approximately USD 51.2 billion of the grey finance total was provided to or in high deforestation countries. High deforestation are countries with an annual average deforestation rate that exceeds 30,000ha.

Yet, even if all grey public finance flows were redirected to green, finance totals would still fall woefully short of the total finance needed to protect forests (**Figure 2**). As in previous years, limited available data on corporate and philanthropic investments suggest that these remain a relatively small source of green finance, likely in the order of USD several hundred billion.

Even compared to finance with a specific climate objective, forests and land use are proportionately underfunded. Total global climate finance, from both public and private sources, reached USD 632 billion in 2019-20 alone.[4] Of this total, only about USD 14.3 billion (2.3%) was dedicated to land use. This comprised USD 8.1 billion in mitigation finance; approximately USD 3.4 billion of which went to forestry projects. A further USD 6.2 billion was provided as adaptation or "dual-benefit" finance to (undefined) land use activities.

Pledges made in 2021 demonstrate a substantial increase in ambition for green finance. If they are fully implemented, and are additional to pre-existing commitments, this combined ambition would lead to a quadrupling of annual forest finance to USD 9.5 billion between 2021-25[h]. This also includes a notable increase of funding from philanthropy and corporate companies, for which we have so far only detected minor amounts of funding based on very limited data. Overall, this increase would be substantial but still very far from what is required to achieve forest goals by 2030.

Available data does not yet show an increase in funding corresponding to pledges made at the climate summit in Glasgow in November 2021. Instead, current funding levels appear to have dropped precipitously in the past year (see Section 1). Public and private sector funders making pledges must provide more transparency on measurable and clear targets to enhance their accountability, including targets for greening grey finance.

# 1. Have governments made finance flows consistent with forest goals?

## 1.1 Increasing public green finance for the sustainable use, protection, and enhancement of forests

*Public support provided to the land sector—including agriculture, forestry, and land use—can greatly shape the extent to which forests mitigate or contribute to climate change, domestically and internationally. Public finance also has an influence on private sector investment, by creating incentives that drive private finance toward activities to protect and enhance forests, or to harmful activities. Green forest finance can support forest protection, sectoral research and capacity building, and economic incentives for leveraging private finance.*

International and domestic public finance has, to date, provided the bulk of support to forests. Between the years 2010-20, governments committed USD 25.3 billion of domestic and international public funding aligned with forest goals (**Figure 3)**.[i] During this period, USD 8.3 billion of this total was provided by

[h] The sum of average annual green funding between 2010-22 and the average annual number of combined pledges (see section above)

[i] This total includes international climate-related development finance, and international REDD+ and domestic REDD+ finance. Note that finance estimates cover different timeframes – the majority spanning only between 2010-20. International development finance includes bilateral and multilateral finance commitments made during the period 2010-2020, as recorded in the OECD DAC External Development Finance Statistics database. International REDD+ includes REDD+ readiness and implementation finance commitments by NICFI, FCPF, GCF, FIP, ISFL, UN-REDD, REDD Early Movers, and CBFF between 2010-20, including some more recent figures. Data was obtained directly from contacts, from

governments, multilateral development banks, and multilateral organizations to activities that promote the protection, sustainable management, and enhancement of forests.

**Figure 3. International and domestic public finance committed to forest activities between 2010-2022, in billion USD**

10.1 billion
domestic REDD+

6.9 billion
international REDD+

8.3 billion
international green finance

**Total: 25.3 billion USD**

Flows of international green finance have increased since 2010 (**Figure 4**), with a significant period of growth between the years 2016-19. In 2020, however, finance flows fell by almost half, likely due to countries' changing budget priorities during the COVID-19 pandemic.[5] It remains to be seen how and when finance flows to forests will rebound and when they will pick up in response to recent pledges (see **Table 1**).

Between 2010-20, multilateral climate funds and bilateral donors committed USD 6.9 billion under the REDD+ framework (**Box 1**).[j] Disbursements of results-based payments for REDD+, however, remain slow, with only a few countries receiving finance and only half of committed finance disbursed. Under REDD+, governments invest finance for strategies to reduce forest emissions—typically in tropical or subtropical countries—in three phases: readiness, implementation, and payment for results. Also in 2010-20, governments in high deforestation countries committed USD 10.1 billion to activities under domestic REDD+ plans.[k,l]

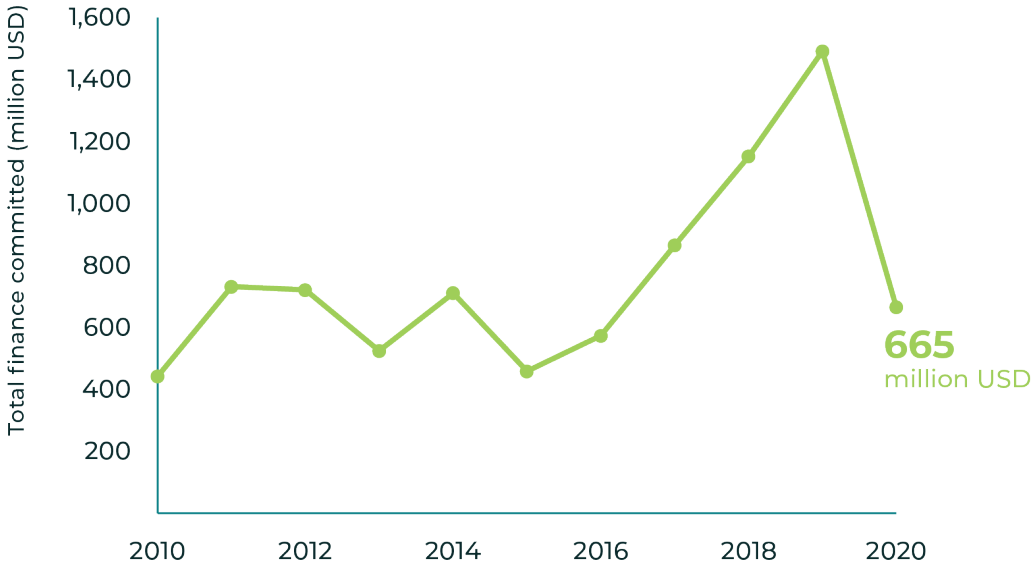
publicly available reports, or from Climate Funds Update. Domestic REDD+ includes government REDD+ finance commitments made by 16 REDD+ countries that budgeted for government contributions. Data obtained from EPRDs available on the FCPF website and the finance commitments cover different timeframes.

[j] Climate Focus compilation of REDD+ readiness and implementation finance commitments (cumulative since 2010)—Data obtained directly from contacts, from publicly available reports, or from Climate Funds Update. Includes commitments and disbursements from NICFI, FCPF, GCF, FIP, ISFL, UN-REDD, REDD Early Movers, CBFF.

[k] High deforestation countries are those with an annual average deforestation rate that exceeds 30,000ha. Domestic REDD+ finance allocated in the government investment plans of 16 REDD+ countries.

[l] Climate Focus analysis of FCPF EPRDs (the 16 countries that budgeted for government expenditures). Note that investment plans cover different timeframes.

**Figure 4. International climate mitigation finance committed to forest sectors by bilateral and multilateral providers between 2010-2020, in million USD**




### BOX 1. BARRIERS TO PROGRESS IN IMPLEMENTING REDD+

REDD+ is the UNFCCC framework for "Reducing Emissions from Deforestation and Degradation plus conservation, sustainable management, and enhancement of forest stocks". REDD+ provides developing country policy makers with a framework for national (or subnational) climate action in the forest sector. The Warsaw Framework for REDD+, the Cancun REDD+ safeguards, and other UNFCCC decisions provide high-level guidance for governments on how to achieve emissions reductions and access results-based finance. Complemented by the requirements and guidelines of several donor initiatives and standards, these frameworks guide countries in developing the systems needed for monitoring, accounting, and reporting emission reductions, while also safeguarding and fairly distributing social and environmental benefits. They also guide countries in setting up the coordination bodies for REDD+ programs and developing policies that address drivers of deforestation and forest degradation.

Although dozens of governments have initiated REDD+, laying the groundwork for reforms and driving policy changes, in most cases REDD+ programs have not yet yielded a reduction in deforestation, and only a handful of countries have received payments for forest emission reductions.[6] Most REDD+ initiatives are still a long way from stopping tropical deforestation and have yet to move from a preparatory "readiness" stage to accessing results-based finance.[7] Worryingly, developing country governments are behind in initiating the bold sectoral reforms needed to incentivize the sustainable use and protection of forest, and developed country governments are behind in delivering payments to disincentivize forest destruction.[8]

The complexity of REDD+ activities and the capacities required to receive results-based payments have posed barriers to viability and delivery of REDD+. Meeting donors' requirements has been challenging as activities to reduce forest sector emissions have proven to be more complex and expensive than expected.[9] REDD+ countries face a multitude of standards, program requirements, price offers, and donor expectations on top of the UNFCCC frameworks. Standards and programs are—except for the GCF—not the result of multilateral negotiations. Different standards take diverse approaches to ensuring the environmental and social integrity of REDD+ programs; for example, setting safeguards, reference levels and systems for monitoring, reporting and verifying emission reductions.[10] Overlapping program requirements create confusion and additional burdens on REDD+ countries. Furthermore, REDD+ is implemented outside of existing policy frameworks and fails to be integrated into relevant sectoral policies,[11] despite mechanisms for multistakeholder coordination.[12]

## 1.2 Aligning business-as-usual, "grey" finance to support the sustainable use and protection of forests

*Opportunities for "greening" grey finance include making support conditional upon achieving environmental objectives and removing or redirecting agricultural production support to other public goods and services. Policies for the land sector can incentivize emission reductions, redirect subsidies away from unsustainable agriculture, improve access to sustainable agricultural and industrial techniques, and secure land tenure.[13] Financial supervisors can also drive investor actions, choices, and risk in alignment with forest goals. Government transparency is needed to understand how domestic finance supports forest protection and conservation, and which safeguards are in place to prevent investments in other development activities from negatively impacting forests. In addition, green budgeting, green taxonomy, and risk assessment tools help to align and redirect finance flows to support forest goals.*

Green finance flows dedicated to forest activities are dwarfed by flows of finance to business-as-usual activities that have the potential to drive deforestation or forest degradation. Between the years 2010-20, grey public finance flows were estimated to total just over USD 270 billion: USD 257 billion in domestic finance and USD 13.4 billion in international finance.[m] Almost 20 percent of total grey finance flows were provided to or in high deforestation countries.[n]

Green budgeting tools are being developed to assess the extent to which budgetary and fiscal policies are coherent with the delivery of national and international climate and environmental commitments. Green budgeting involves evaluating the environmental impacts of budgetary and fiscal policies and assessing opportunities for aligning public investment and taxation with climate goals.[14] The Organisation for Economic Co-operation and Development (OECD) Paris Collaborative for Green Budgeting is working with governments and experts to define methodologies for aligning national and international budgetary policies.

The EU and Colombia, along with several other governments, are pioneering the application of "green taxonomy" tools to assess opportunities for green investment. Green taxonomy tools provide a standardized classification system that identifies projects with environmental objectives and mobilizes public and private finance to such activities. Both, the EU's taxonomy[15] and Colombia's taxonomy[16] were implemented in 2022 and contain technical screening criteria for forest-related activities. The green taxonomy functions as an investment screening framework to direct finance towards activities that present the least risk and most benefits to forests.

New risk assessment frameworks are being developed to help financial actors understand the systemic risks that biodiversity loss and ecosystem degradation pose to their investments. It has been suggested that financial regulators have both the mandate and authority to ensure that financial flows do not contribute to the depletion of nature and forests, and financial actors around the world are beginning to embed such considerations in their decision-making.[17] Notable examples can be found in the Netherlands,[18] France,[19]

[m] Climate Focus analysis. *Domestic finance* includes government expenditure on the agriculture and forestry sectors, in the 41 countries covered by FAOSTAT data. Cumulative 2010-2020. Note that this is likely to be a significant underestimate, given the high number of missing countries. *International finance* includes the international development finance commitments of the 142 countries reported in the OECD Creditor Reporting System database. Finance flows included are: *Agricultural development; Agricultural inputs; Food crop production; Industrial crops/export crops; Livestock; Agrarian reform; Agricultural services; Livestock/veterinary services; Forest industries.* Cumulative 2010-2020.

[n] Approximately USD 51.2 billion of the grey finance total was provided to or in high deforestation countries. High deforestation are countries with an annual average deforestation rate that exceeds 30,000ha.

Brazil,[20] Malaysia,[21] and Chile.[22] Regulators, financial authorities and central banks are still working to fill gaps in understanding how systemic financial risks are associated with ecosystem degradation.[23]

One notable development is the recent "Call to Action" by WWF and over 90 other organizations who have developed a roadmap to help financial institutions embed climate- and biodiversity- related risks into their mandates. The Call to Action—which particularly targets finance ministers engaging in upcoming summits such as COP27 and Biodiversity COP15—urges financial actors to become "nature-positive" by 2030 and achieve net-zero emissions by 2050. Proposed actions include making monetary policies and regulatory instruments better reflect environmental economic costs, and requiring all regulated financial institutions publish credible transition plans for biodiversity and climate change.[24]

### 1.3 Supporting IPs and LCs' tenure and forest management

*Protecting IPs and LCs' land rights is an evidence-backed climate change solution that costs a fraction of other mitigation options. Policies and laws that recognize the tenure and governance rights of forest communities are essential for securing forest protection. Global finance needs for securing land rights for IPs and LCs to enable forest mitigation activities are estimated at USD 8.9 billion in total, equal to just over USD 315 million per year between now and 2050.[25] IPs and LCs' needs represent only 1.4 percent of the total public climate finance provided in the years 2019-20.[26]*

IPs and LCs receive far less funding than their estimated finance needs for securing tenure rights and preserving the ecosystems in their territories. Rainforest Foundation Norway (RFN) estimated that projects supporting Ipand LC tenure and forest management received approximately USD 270 million per year on average during the period 2011–20.[27] Of this total, it was estimated that only 11 percent was provided to projects that advanced tenure security—meeting only 3 percent of the financial needs identified by the Rights and Resources Initiative (RRI) for transformational tenure reform. Additionally, most finance provided to IP and LC tenure and forest management activities passes through larger intermediaries, creating risks that only a small portion of finance reaches IP and LC beneficiaries. In RFN's analysis of donor transactions to approximately 1,656 IP and LC organizations, only 17 percent of projects included the name of an IP and LC organization in the project implementation description.

Governments, multilateral institutions, and private foundations should prioritize the establishment of new and direct finance mechanisms for these activities and should codesign these mechanisms with IP and LC groups. To guarantee that forest conservation and restoration activities are sustainable and transformational, financial (and non-financial) benefits must equitably flow to different stakeholders involved, particularly IPs and LCs, through the design and implementation of benefit sharing arrangements. These arrangements must ensure that forest conservation and restoration activities provide net socioeconomic benefits to affected stakeholders by requiring deep and significant participation; broad and inclusive representation; transparency and accountability; respect for rights including free, prior, and informed consent (FPIC); adequate compensation; and adaptive management.

## 2. Have private companies made finance flows consistent with forest goals?

### 2.1 Sustainable investments in forest protection and conservation, commodity production, and resource extraction

*Private finance has considerable leverage power to steer commodity production onto a sustainable trajectory and enable forest protection and conservation. This section assesses the extent to which private investment is being directed into activities that increase the sustainability of commodity production and forest management, whether*

*through targeted green investment or by adding forest safeguards to financial flows. A 2016 estimate from Vivid Economics states that it would take USD 160-233 billion in direct investment and trade finance each year to make four of the major forest-damaging commodity supply chains—cattle, soy, palm oil, and pulp and paper—deforestation-free.*[28]

The limited data that are available suggest that the magnitude of private green finance reaches several billion USD, a fraction of what is needed. In our 2017 report, the Assessment Partners estimated the cumulative private sector investment in forest-related subsectors amounted to USD 3.3 billion over the period 2009-15.[29] A more recent estimate suggested that the private sector now spends an average of USD 7 billion per year on sustainable supply chains alone.[30] Other private funding is also being channeled into sustainable land practices through public-private partnerships, with an estimate from 2020 suggesting these partnerships account for at least USD 683 million globally.[31] On the philanthropic side, of the average annual USD 1.3 billion channeled to climate change mitigation between 2015-20, only around USD 95 million annually was dedicated to direct forest activities.[32]

Private finance flowing to grey investments is equally hard to quantify. Anecdotal evidence suggests that, as with public investment, it dwarfs green finance flows. Non-profit Global Canopy reported that the top 150 financial institutions included in their 2022 Forest 500 assessment provide USD 7.1 trillion to the 350 companies with the greatest influence in forest-risk commodity supply chains.[o,33] It is worth noting that given the limited scope of this estimate, comprehensive figures are likely to be of much larger magnitude. Another report indicates that between 2015-20, global meat and dairy companies—some of the largest contributing industries to tropical deforestation[p]—received over USD 478 billion in financing from private financial entities.[34]

Most of the major financial institutions exposed to deforestation do not have any deforestation safeguards for their investments.[q] In 2021, this represented more than USD 2.6 trillion in investments in high deforestation risk commodities that are not covered by a forest conservation policy.[35]

## 3. Are carbon markets contributing to forest finance?

Private sector actors have multiple opportunities to invest in nature conservation and restoration, including market-based options such as participation in carbon markets with forest-based credits, and non-market options such as support for implementation of jurisdictional or landscape-scale sustainability activities. In the absence of data on private sector direct investments in jurisdictional and landscape approaches, we are unable to assess those contributions. However, data is available for finance flowing through carbon markets; therefore, this section assesses progress toward leveraging carbon markets for forest goals.

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[o] Global Canopy identifies and assesses the 150 financial institutions providing the most finance to the 350 companies with the greatest exposure to tropical deforestation (as identified by the Forest 500 assessment). This figure includes shareholdings, loans, underwritings, and bondholdings.

[p] Cattle rearing alone has been estimated to account for 36 percent of tree cover loss associated with agriculture occurring between the years 2001 and 2015. See WRI (2018) Global Forest Review: Deforestation Linked to Agriculture. Available at https://research.wri.org/gfr/forest-extent-indicators/deforestation-agriculture?utm_medium=blog&utm_source=insights&utm_campaign=globalforestreview.

[q] In Global Canopy's 2022 Forest 500 assessment, 93 of the 150 financial institutions most exposed to deforestation do not have a single deforestation policy covering their investments in companies in the highest forest-risk commodity supply chains.

### 3.1 Leveraging voluntary carbon markets for forests

*The voluntary carbon market (VCM) allows companies, private entities, and governments to purchase carbon credits generated by a wide range of emissions mitigation projects, certified by an array of crediting standards and programs. While decarbonization through direct emission reductions in company and institutions' own value chains should be prioritized, carbon credits can—according to net zero frameworks such as the SBTi[36]—be used for compensating or neutralizing residual emissions that cannot yet be mitigated or to finance additional climate mitigation beyond their science-based emission reduction targets. Using a carbon price that includes the social and environmental costs of emissions, purchasing high quality credits can finance additional reductions while contributing to and supporting future climate solutions.[37] With adequate levels of ambition, integrity and strategic alignment, carbon credits can provide a source of funding to support the development of jurisdictional REDD+ programs and to catalyze implementation and results at scale.*

Finance flows generated by the VCM still remain miniscule compared to the (up to) USD 460 billion per year in finance needs estimated for the protection, restoration, and enhancement of forests globally.[38] The numbers are however growing quickly with the values traded in just the first half of 2021—USD 544 million—equating to more than double the 2020 total.[39]

Demand for nature-based carbon credits from project-scale and jurisdictional-scale activities has grown significantly in recent years. The volume of carbon credits traded in the VCM exploded in 2021, reaching a total of more than 354 megatons $CO_2$-equivalent (Mt $CO_2e$), 89 percent more than in 2020.[40] This growth was primarily driven by the increasing number of companies using carbon credits to meet their net zero commitments or to contribute to mitigation beyond their targets. Alongside voluntary net-zero commitments, a variety of sectoral- and non-governmental organization (NGO)- led initiatives have emerged in recent years to support companies in the limited use of certain credits to offset residual emissions, in line with SBTi.[r] Increased interest in jurisdictional REDD+ means that the issuance of credits may further increase in coming years. Issuances elsewhere are already rising to meet—and possibly exceed—current demand, with Gabon set to issue over 90 million REDD+ credits, and Belize a further 6 million in the coming year.[41]

Forestry and land use carbon credits have gained considerable prominence in the VCM, accounting for over 45 percent of all credits issued in 2021.[42] Of these credits, approximately 56 percent were generated from avoided deforestation projects, 27 percent from avoided conversion, 13 percent from afforestation and reforestation, and 3 percent from improved forest management projects.[s,43] Forest carbon credits were transacted nearly 2.7 times more than in 2020, amounting to a total 160 MtCO2e over the full course of the year.[44]

The average price at which such credits were sold in the VCM during 2021 was estimated at between USD 4.7 and USD 15 per ton of $CO_2$.[45] This price is far below the cost range economists recommended for meeting the Paris Agreement's 1.5-2 degree C target, which ranges between USD 50 and 250 per ton of $CO_2$.[46] Cheap forest and land use carbon credits are unlikely to cover the true cost of impactful conservation and restoration activities; nor can they generate adequate levels of income for implicated communities on the ground.

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[r] Examples include the UNFCCC's Race to Zero initiative, which now hosts 5,235 company commitments, and the Glasgow Financial Alliance for Net Zero, a coalition of financial institutions representing around 40 percent of global banking assets that have now made such commitments.

[s] The remaining 1 percent were related to carbon sequestration in agriculture, reduced emissions in agriculture, and wetland restoration.

Credits in the land and forest sector have historically been criticized for issues related to additionality, permanence, baselines for measuring emission reductions, and adverse impacts on IPs and LCs. Skepticism, not just around forest and land use credits, has spurred the development of integrity initiatives in recent years. These initiatives aim to help projects meet quality standards, such as demonstrating clear additionality, and robust baselines to accurately quantify emission reductions or removals. Examples include the Integrity Council for the Voluntary Carbon Market, which is currently developing guidelines to promote higher quality and standardization of the market; and the Voluntary Carbon Markets Integrity Initiative (VCMI), a multi-stakeholder platform developed to drive credible, net-zero aligned participation in the market. Credits from the land sector remain attractive to voluntary market buyers with net zero targets that depend on removals to neutralize emissions that cannot yet be mitigated through direct measures. For example, energy sector companies—primarily large oil and gas companies—continue to be the biggest purchasers of forest and land use carbon credits, responsible for approximately 70 percent of all carbon credits purchased between January and September 2021.

### 3.2 Using compliance markets for mandatory emission reductions to support forests

*Similarly, compliance markets allow entities covered by mandatory emission reduction commitments to buy carbon credits to meet their obligations. This includes national obligations under international agreements such as the Paris Agreement; obligations imposed by certain sectors such as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA); and obligations imposed by domestic laws, such as a national emissions trading scheme (ETS) or carbon tax.*

The overall contribution of compliance schemes to forest finance is small and is likely to remain so in the near future. Only 10 percent of the carbon credits issued globally in 2021 came from schemes that allow carbon credit use from forests.[47] The carbon crediting mechanism for the aviation sector, CORSIA, is often cited as a potential driver for future carbon credit demand. Yet, in light of a decision to set the baseline at 2019 emissions only rather than the average of both the years 2019 and 2020, it is likely that demand for (nature-based) carbon credits from CORSIA will remain low.[48]

New rules for international carbon markets under the United Nations Framework Convention on Climate Change (UNFCCC) were defined at COP26 in 2021, potentially opening opportunities for channeling forest finance in the long term. COP26 saw the finalization of the Paris Agreement Article 6 rulebook, which provides clarity on how compliance markets can contribute to meeting NDC goals as well as enhance climate ambition through voluntary cooperation. The rulebook sets the conditions for the international trading and transfer of emission reduction units by enabling two market-based mechanisms (Article 6.2 and Article 6.4). Regulations outlined so far suggest these mechanisms will be relatively accommodating for forest and land use (FLU) projects. Unlike the Clean Development Mechanism (CDM), they do not explicitly exclude emission reductions from avoided deforestation and avoided forest conversion. Some uncertainty remains, however, over the eligibility of credits generated from emissions avoidance activities—a decision which will be made at COP27.[49] Thus, while experts hope that Article 6 can become a successful mechanism for leveraging finance into FLU activities, it remains to be seen how final regulations will shape the quantity and quality of internationally traded FLU carbon credits.

# Endnotes


1. NYDF Assessment Partners. (2021). *Taking stock of national climate action for forests*. https://forestdeclaration.org/resources/taking-stock-of-national-climate-action-for-forests/.

2. United Nations Framework Convention on Climate Change. (2015). Adoption of the Paris Agreement. Twenty-First Session. Presented at the Conference of the Parties, Paris. https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf

3. CDP. (2022, January 25). The financial sector needs to report on nature risks, and here's why. https://www.cdp.net/en/articles/investor/the-financial-sector-needs-to-report-on-nature-risks-and-heres-why.

4. Climate Policy Initiative. (2021). *Global Landscape of Climate Finance 2021*. https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2021/.

5. UN Department of Social and Economic Affairs. (2021). Policy Brief #88: Financing sustainable forest management: a key component of sustainable COVID-19 recovery. https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-88-financing-sustainable-forest-management-a-key-component-of-sustainable-covid-19-recovery/

6. NYDF Assessment Partners. (2021). *Taking stock of national climate action for forests*. https://forestdeclaration.org/resources/taking-stock-of-national-climate-action-for-forests/.

7. Atmadja, S. S., Duchelle, A. E., Sy, V. D., Selviana, V., Komalasari, M., Sills, E. O., et al. (2022). How do REDD+ projects contribute to the goals of the Paris Agreement? *Environmental Research Letters*, *17*(4), 044038. https://doi.org/10.1088/1748-9326/ac5669.

8. Angelsen, A., Martius, C., Duchell, A., Larson, A., Thu Thuy, P., & Wunder, S. (2018). Conclusions: Lessons for the path to a transformational REDD+. In *Transforming REDD+: Lessons and new directions*. Center for International Forestry Research (CIFOR).; Atmadja, S. S. et al. (2022). Jong, H. N. (2021, September 10). Indonesia terminates agreement with Norway on $1b REDD+ scheme. *Mongabay Environmental News*, *Indonesian Forests*. https://news.mongabay.com/2021/09/indonesia-terminates-agreement-with-norway-on-1b-redd-scheme/.

9. NYDF Assessment Partners. (2021).

10. NYDF Assessment Partners. (2021).

11. Korhonen-Kurki, K., Brockhaus, M., Sehring, J., Di Gregorio, M., Assembe-Mvondo, S., Babon, A., et al. (2018). What drives policy change for REDD+? A qualitative comparative analysis of the interplay between institutional and policy arena factors. *Climate Policy*, *19*(3). https://doi.org/10.1080/14693062.2018.1507897.

12. NYDF Assessment Partners. (2021).

13. Climate Focus. (2021).

14. OECD. (2022). OECD Paris Collaborative on Green Budgeting. https://www.oecd.org/environment/green-budgeting/.

15. European Commission (2021) Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021, supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council: First delegated act on sustainable activities for climate change adaptation and mitigation objectives. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R2139.

16. "Colombia launches green taxonomy" (13 April 2022). *Argus Media*. https://www.argusmedia.com/en/news/2321736-colombia-launches-green-taxonomy.

17. NGFS. (2022). Chapter 2. Central banking and supervision in the biosphere: An agenda for action on biodiversity loss, financial risk and system stability. https://www.ngfs.net/sites/default/files/medias/documents/central_banking_and_supervision_in_the_biosphere.pdf.

18. DNB. (2020). Indebted to nature Exploring biodiversity risks for the Dutch financial sector. https://www.dnb.nl/media/ 4c3fqawd/indebted-to-nature.pdf.

19. Banque de France. (2021). A "Silent Spring" for the Financial System? Exploring Biodiversity-Related Financial Risks in France. https://publications.banque-france.fr/en/silent-spring-financial-system-exploring-biodiversity-related-financial-risks-france.

20. Calice, Diaz Kalan, and Miguel. (2021). Nature-Related Financial Risks in Brazil. Policy Research Working Paper;No. 9759. World Bank. https://openknowledge.worldbank.org/handle/10986/36201

21. World Bank. (2022). Exploring Nature-Related Financial Risks in Malaysia. https://www.worldbank.org/en/events/2022/03/15/exploring-nature-related-financial-risks-in-malaysia.

22. UNEP. (2022). Conference on "biodiversity loss and ecosystem degradation: implications for macroeconomic and financial stability". https://www.unepfi.org/events/webinar-on-biodiversity-loss-and-ecosystem-degradation-implications-for-macroeconomic-and-financial-stability/

23. NGFS. (2022). Central banking and supervision in the biosphere: An agenda for action on biodiversity loss, financial risk and system stability. https://www.ngfs.net/sites/default/files/medias/documents/central_banking_and_supervision_in_the_biosphere.pdf; Climate Focus. (2021). Shifting Finance Toward Sustainable Land Use: Aligning

public incentives with the goals of the Paris Agreement. https://feldactiontracker.org/green-finance.

[24.] WWF. (2022). Call to Action to Ensure Transition to a Net Zero and Nature Positive Economy. https://wwfint.awsassets.panda.org/downloads/wwf_gfri_call_to_action_2022_sept_28.pdf.

[25.] This value covers the 24 countries that are ready for national- or medium-scale IPLC projects. See Rights and Resources Initiative (2021) Scaling-Up the Recognition of Indigenous and Community Land Rights: Opportunities, Costs and Climate Implications. https://rightsandresources.org/wp-content/uploads/2021/03/Scaling-Up-the-Recognition-of-IP-and-Community-Land-Rights-Opportunities-Costs-and-Climate-Implications-Final.pdf.

[26.] Between 2019-2020, USD 632 billion in climate finance was provided globally. See Climate Policy Initiative (2021) Global Landscape of Climate Finance 2021. https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2021/.

[27.] Rainforest Foundation Norway. (2021). Falling short: Donor funding for Indigenous Peoples and local communities to secure tenure rights and manage forests in tropical countries (2011–2020). https://d5i6is0eze552.cloudfront.net/documents/Publikasjoner/Andre-rapporter/RFN_Falling_short_2021.pdf?mtime=20210412123104.

[28.] Tropical Forest Alliance. (2017). The Role of the Financial Sector in Deforestation-Free Supply Chains. https://www.vivideconomics.com/wp-content/uploads/2019/08/TFA2020_Framing_Paper_030117.pdf

[29.] Climate Focus (2017). Progress on the New York Declaration on Forests: Finance for Forests - Goals 8 and 9 Assessment Report. https://forestdeclaration.org/resources/finance-for-forests/

[30.] United Nations Environment Programme (2021) State of Finance for Nature. https://www.unep.org/resources/state-finance-nature.

[31.] NYDF Assessment Partners (2021) Goal 8 assessment: Providing finance for forest action. https://forestdeclaration.org/goals/goal-8/.

[32.] Desanlis, H., Matsumae, E., Roeyer, H., Yazaki, A., Ahmad, M., & Menon, S. (2021) Funding trends 2021: Climate change mitigation philanthropy. ClimateWorks Global Intelligence. https://www.climateworks.org/report/funding-trends-2021-climate-change-mitigation-philanthropy/

[33.] Global Canopy. (2022). Forest 500 update of financial institutions with greatest exposure to tropical deforestation. https://forest500.org/analysis/insights/forest-500-update-financial-institutions-greatest-exposure-tropical-deforestation.

[34.] Heinrich Böll Stiftung (2021) Meat Atlas; Facts and figures about the animals we eat. https://eu.boell.org/sites/default/files/2021-09/MeatAtlas2021_final_web.pdf

[35.] Global Canopy (2022) Forest 500 Annual Report. https://forest500.globalcanopy.org/.

[36.] SBTi. (n.d.). The Net-Zero Standard. https://sciencebasedtargets.org/net-zero.

[37.] Schallert, B., Stevenson, M., Weber, C., Farsan, A., Nielsen, J., Ponce de León, P., et al. (2020). *Beyond Science-Based Targets: A Blueprint for Corporate Action on Climate and Nature*. https://wwfint.awsassets.panda.org/downloads/beyond_science_based_targets___a_blueprint_for_corporate_action_on_climate_and_nature.pdf.

[38.] Climate Focus calculation based on multiple sources: see NYDF (2021) Taking stock of national climate action for forests: 2021 NYDF Assessment Report. Technical Annex. https://forestdeclaration.org/resources/taking-stock-of-national-climate-action-for-forests/

[39.] Ecosystem Marketplace (n.d.). Dashboard data. Retrieved in July 2022 from https://data.ecosystemmarketplace.com/

[40.] Climate Focus: The Voluntary Carbon Market Dashboard. (n.d.). (Retrieved July 2022). https://climatefocus.com/initiatives/voluntary-carbon-market-dashboard/.

[41.] Carbon Pulse (18 July 2022) More than 100 mln sovereign forest credits set to reach VCM by autumn. https://carbon-pulse.com/166413/.

[42.] Climate Focus: The Voluntary Carbon Market Dashboard. (n.d.).

[43.] Climate Focus: The Voluntary Carbon Market Dashboard. (n.d.).

[44.] Climate Focus: The Voluntary Carbon Market Dashboard. (n.d.).

[45.] Estimate price range based on price data from: Ecosystem Market Place (2021) Data - issuances and retirements by category. Retrieved on September 2022 from https://data.ecosystemmarketplace.com/; World Bank (2022) State and Trends of Carbon Pricing 2022. https://openknowledge.worldbank.org/handle/10986/37455.

[46.] See, e.g. Bhat (2022). Carbon needs to cost at least $100/ton now to reach net zero by 2050: Reuters poll. Reuters. https://www.reuters.com/business/cop/carbon-needs-cost-least-100tonne-now-reach-net-zero-by-2050-2021-10-25/; High-Level Commission on Carbon Prices (2017). Report of the High-Level Commission on Carbon Prices. https://static1.squarespace.com/static/54ff9c5ce4b0a53decccfb4c/t/59b7f2409f8dce5316811916/1505227332748/CarbonPricing_FullReport.pdf

[47.] World Bank. (2022). State and Trends of Carbon Pricing 2022. https://openknowledge.worldbank.org/handle/10986/37455.

[48.] World Bank. (2022).

[49.] Greiner, S., Hoch, S., Mbaye Diagne, E. H., Andreo Victoria, G., & Singh, A. (2022). *COP26 Digest: The Significant of Article 6 and CDM Transition Outcomes for Africa*. https://climatefocus.com/wp-content/uploads/2022/06/CFI-Short-Study-COP26-Digest.pdf#page=9.

# Acknowledgments


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Erin D. Matson

We would also like to thank the following people for their valuable insights and review:

Maud Abdelli, Jillene Belopolsky, Helen Burley, Marco Chiu, Sarah Draper, Melaina Dyck, Monique Ewerton, Helen Finlay, Hilda Galt, Stephanie Kimball, Hermine Kleymann, Anna Locke, Breanna Lujan, Pablo Pacheco, Kayan Patel, Anna Rynearson, Emma Thomson, Brittany Williams, and Heather Wright

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## COPY EDITOR

Emily Steadman


## CITATION

Please use the following citation when referencing the findings presented in this brief:

> Forest Declaration Assessment Partners. (2022). Finance for forests: Theme 3 assessment. *Forest Declaration Assessment: Are we on track for 2030?* Climate Focus (coordinator and editor). Accessible at www.forestdeclaration.org.

# Forest governance

## Theme 4 Assessment

THEME 4

**FOREST GOVERNANCE**

Theme 4 of the Forest Declaration Assessment covers forest governance systems and the extent to which they support the goal of halting and reversing forest loss and land degradation by 2030. Elements of forest governance assessed include legal, policy, and institutional frameworks on sustainable management and protection of forests; demand-side measures and international engagement; law enforcement; tenure security, rights protection, and empowering Indigenous Peoples and local communities; and transparency, public participation, and access to justice. This report builds on previous NYDF Progress Assessment reports on NYDF Goal 10.

# Key Messages

With only eight years left to reach the 2030 goals on curbing deforestation and degradation, governance of forests and forest lands is not yet strong enough. Robust legal and policy instruments such as moratoria, strengthened enforcement capacity, smart conservation policies, and improved transparency and accountability are effective in protecting forests. There have been remarkable reductions in deforestation since 2004 in Indonesia, Ghana, Côte d'Ivoire, Gabon, Guyana, and Brazil in periods when these policy tools were employed. Yet, some of these achievements have been reversed—notably in Brazil—or are at risk of being reversed as countries phase out or roll back policy gains through recent and proposed amendments.

In some countries, reforms and new initiatives have strengthened legal and policy frameworks governing forests and land use. Jurisdictions such as the Republic of the Congo and the United States have recently developed laws and policies to protect and sustainably manage their forests more effectively. Others, like the European Union (EU), Australia, Vietnam, and China are expanding on their demand-side regulations by developing laws addressing import of forest-risk commodities and enhancing traceability in the forest sector. However, most of these proposals lack sufficient detail, are in early stages of development, or have yet to be implemented at a sufficient scale to curb deforestation in line with the 2030 goals.

A growing number of countries have adopted more inclusive approaches to policy development, implementation, and enforcement, reflecting both increasing capacity and expertise within civil society and government recognition of the value of forest protection. This has led to improvements in policies and laws, and enhanced accountability of government and the private sector in the Republic of the Congo, Ghana, and Cameroon.

Law enforcement has also improved in a few tropical forest countries. For example, law enforcement has improved detection of illegal timber from Lao People's Democratic Republic and contributed to reduced deforestation in Indonesia. However, in other countries, law enforcement has been weakened and gaps have been created in the existing legal frameworks, preventing effective enforcement. Furthermore, corruption is widespread in many forest areas, facilitating illegalities in forests and illegal trade in timber.

Finally, tenure insecurity is persistent in many countries, with at least 50 percent of the lands and territories held by Indigenous Peoples (IPs) and local communities (LCs) still not legally recognized. Reforms in Congo Basin countries such as the Republic of the Congo and Democratic Republic of the Congo (DRC) have strengthened the recognition and protection of IPs and LCs' rights. However, other major tropical forest countries have weakened the legal protection of IPs and LCs' rights through regulatory and legislative changes or have not accelerated implementation of policies and laws to recognize of IPs and LCs' forests, lands, and waters. IPs and LCs still face violations of their rights and territories, as well as violence and marginalization.

# Recommendations

Governments must take urgent steps to strengthen forest governance, including:

- Address weaknesses, overlaps, and ambiguities in forest legal frameworks; clarify unclear and overlapping laws, regulations, and institutional mandates; streamline legal frameworks in the forest and non-forest sectors; and improve the enforcement authorities' capacity to understand the law.
- Halt and reverse the weakening of legal frameworks and institutional capacities. Governments should carefully assess the long-term implications of recent rollbacks for sustainable development and forests. This includes recent amendments and new laws that undermine forest protection and reforms that weaken environmental and social protections in the wake of COVID-19.
- Secure IPs and LCs' land tenure rights by developing and implementing clear and coherent laws that formally recognize and protect these rights.
- Implement inclusive processes for forest governance, including by embedding the participation and inclusion of forest-dependent communities in forest decision-making into the legal frameworks, ensuring that IPs and LCs are consulted on and have consented to decisions about their forest lands through a process of FPIC. More broadly, ensure participation of non-state actors in policy and law-making and implementation, land-use planning, law enforcement, and forest monitoring.
- Address regulatory weaknesses and ensure the proper implementation of protected areas legislation and environmental and social impact assessments (ESIAs). Proper implementation of ESIAs includes consideration of all direct, indirect, and cumulative negative impacts on forests and the people dependent on them, and prioritizing avoidance of these impacts in accordance with the mitigation hierarchy.
- Increase checks and balances to combat corruption in the land and forest sector. This requires, for example, limiting government officials' discretion in approving concessions; adopting robust rules to avoid conflicts of interest; implementing robust timber legality assurance systems and due diligence requirements; and ensuring compliance with or the strengthening of transparency laws.
- Strengthen enforcement by allocating sufficient resources to enforcement agencies, strengthening international cooperation, and empowering civil society and communities in monitoring.
- Strengthen land-use planning, including evidence-based spatial planning analyses and processes for allocation of concessions and ESIAs, in alignment with forest goals.

# Introduction

## 1. Why look at forest governance?

Governance generally refers to structures and processes that enable and ensure different stakeholders engage in decisions affecting their livelihoods in an inclusive, transparent, and accountable manner. Governance encompasses clear and equitable legal frameworks, effective institutions, rule of law, and oversight of government decisions by non-state actors. In the context of this report, forest governance covers the following elements:

- The legal, policy, and institutional frameworks and processes that govern the sustainable management, use, and protection of forests.
- Transparency, inclusiveness, and participation of non-state actors in the development and implementation of legal and policy frameworks.
- The rule of law in forest-related matters, including the implementation and enforcement of laws and access to justice for those wronged by forest-related decisions.
- Management and regulation of the demand and consumption of forest and non-forest products linked to deforestation and forest degradation.
- Empowering and protecting the tenure security and rights of Indigenous Peoples (IPs) and local communities (LCs).

Effective forest governance results in clear policy and legal frameworks that enable meaningful participation by all groups, hold governments accountable, and advance action toward the achievement of shared goals. In the context of this report, such goals include forest protection, improved land tenure, and access to natural resources. Evidence suggests that weak forest governance can be harmful, not just for forest landscapes and their ecosystems, but also for societies—particularly those who are most dependent on forest lands, including IPs and LCs, poor people, and other marginalized groups. Case studies show that robust governance systems have successfully contributed to reducing deforestation; for example, in Brazil between 2004-12, Indonesia since 2016, Ghana in 2021, and Gabon since 2018 (see case studies in the Theme 1 report on Overarching forest goals).

Globally, a significant share of deforestation and timber harvesting is done illegally, pointing to the essential need for effective enforcement. A recent study[1] also found that from 35 to 55 percent of tropical forest land cleared for agriculture remains unused in subsequent years. This can be explained by land speculation, unsuitability of the land for cultivation, conflict over or unclear tenure, claims that the land will be used for agriculture that serve as a vehicle for illegal logging, or market fluctuations that make farming financially unattractive. The frequency with which land is deforested and then not used could be reduced through more effective forest governance.

In a world where voluntary pledges are increasingly used to communicate actors' intent to work collectively toward the 2030 forest goals, effective forest governance is essential for ensuring that actions are aligned toward a common objective.

## 2. What has been pledged on forest governance?

Through the Glasgow Leaders' Declaration on Forests and Land Use, 145 countries accounting for over 90 percent of the global forested area have pledged to work collectively to halt and reverse forest loss and land degradation by 2030. Soon after the declaration was made at COP 26, governments and organizations pledged USD 1.7 billion to support the advancement of IP and LC forest tenure rights and recognition of their forest guardianship through the IPLC Forest Tenure Joint Donor Statement. Another USD 12 billion was

pledged by countries to support strengthening of forest and land governance and clarifying of land and forest tenure rights of IPs and LCs, among other actions (**Table 1**).

**Table 1. Examples of pledges and other initiatives to improve forest governance**

| Pledge or Initiative | Description | Intermediate targets and progress reporting | Final target |
|---|---|---|---|
| Glasgow Leaders' Declaration on Forests and Land Use | 145 national governments endorsed this declaration with an overarching goal to halt and reverse forest loss and land degradation by 2030. Among the six themes included in its scope are elements of governance such as **empowering communities** while **recognizing the rights of Indigenous Peoples (IPs) and local communities (LCs)** in accordance with relevant national legislation and international instruments; **redesigning agricultural policies and programs, and ensuring robust policies and systems are in place** to accelerate the transition to an economy that is resilient and advances forest, sustainable land use, biodiversity and climate goals. | Endorsers will take stock starting at COP 27 in 2022. No public information is available about the planned format or frequency | Halt and reverse forest loss and land degradation by 2030 |
| IPLC Forest Tenure Joint Donor Statement | Signed by 23 countries and philanthropic organizations, the signatories pledged USD 1.7 billion in 2021-2025 to **secure and strengthen IPs and LCs tenure rights and the role of IPs and LCs** as guardians of forests and nature. This includes providing support to IPs and LCs, including for collective governance structures and management systems, and for mapping of community tenure rights and registration as well as support to national land and forest tenure reform processes and their implementation. | The signatories will annually report on the pledge progress, including updates on how funds are being spent. The first report will be published at COP 27 | USD 1.7 billion by 2025 |
| The Global Forest Finance Pledge | 12 countries pledged USD12 billion for forest-related climate finance between 2021-2025. Funding will be provided for technical and financial cooperation for capacity building, as well as for other activities that support and strengthen forest and land governance such as **clarifying land tenure and forest rights for IPs and LCs**. | No public information available about reporting plans | USD 12 billion by 2025 |

The pledges listed above include some references to the urgent need for improved forest governance. For example, they highlight the need for enhanced international engagement, improved legal and institutional frameworks, and recognized rights of IPs and LCs. Despite the importance of transparency, participation, and access to justice, as well as improved law enforcement, these issues are not well-covered in the existing landscape of pledges. Overall, the critical need for strengthening or reforming forest and land-use governance is given little attention.

One year after their adoption, it is too early to assess progress under these pledges. While the Glasgow Leaders' Declaration plans an annual stocktake of progress, neither the IPLC Forest Tenure Joint Donor Statement nor the Global Forest Finance Pledge have yet, as of the time of drafting this report, to implement a regular reporting mechanism.

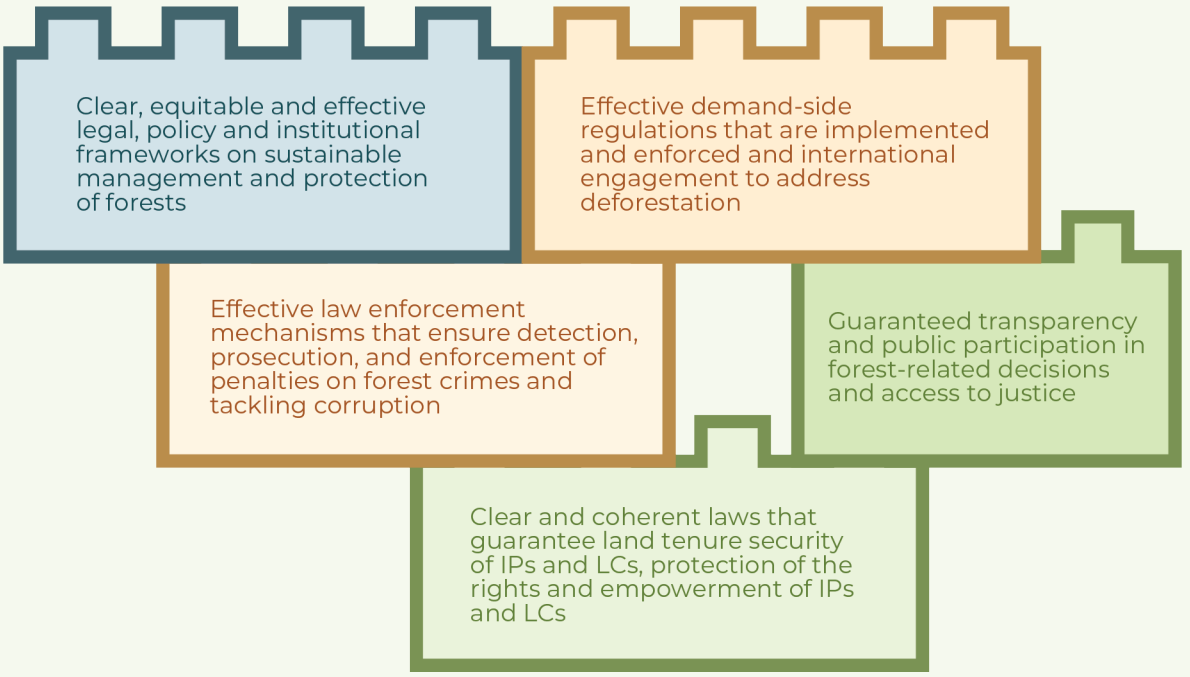
## 3. How does this report assess progress?

We assess the state of forest governance and progress of governments across a range of "building blocks" that will be essential to create coherent, effective, equitable and enforceable governance for forests and forest lands by 2030.

Achieving the 2030 goals requires coherent, effective, equitable and enforceable legal and policy frameworks—that is, frameworks that consider the varied needs and priorities of a country's citizens, including its most marginalized. Achieving this requires capable institutions and inclusive processes, and mechanisms for policy development, implementation, and enforcement.[2] Monitoring the implementation and impacts of laws and policies—including independent, third-party monitoring—is a key feature of robust governance systems. Monitoring enabling governments to respond and adapt laws and policies appropriately when challenges arise.

**Figure 1** illustrates the building blocks assessed in this report. To be "on track" to achieve the overarching 2030 forest goals, a critical mass of these building blocks must be—at least—initiated at scale by governments.

**Figure 1. Building blocks for forest governance**




This report builds on and draws from previous NYDF Assessment reports on forest governance, complemented by updated datasets, where available, and by additional literature review. The Assessment Framework underlying this report draws from and is inspired by the Chatham House forest governance and legality assessments, where policies and interventions are assessed for their existence, quality of design, and level of implementation. A recent Chatham House report on illegal logging and related trade also

contributed valuable information.[3] Additional information came from reports from Forest Declaration Assessment Partner organizations and other institutions as well as a diversity of other sources.

Illustrative examples and case studies have been included from country-level assessments of progress[a] that were conducted as part of the 2022 Forest Declaration Assessment. Though this report aims to assess progress globally, it contains relatively more information on tropical forests and developing countries, in part due to a trend in available data and literature. Future assessments will continue to aim for more comprehensive coverage globally.

[a] Countries assessed were Cambodia, Cameroon, Canada, Colombia, Democratic Republic of the Congo, Dominica, Ecuador, Gabon, Indonesia, Kenya, Liberia, Republic of the Congo, and Vietnam

# Findings

Establishing robust governance is at the core of government action to achieve the 2030 forest targets. Although there have been some areas of improvement, goals countries have made insufficient progress in improving forest governance systems and the rule of law to be on track to reach the 2030 goals. The insufficient progress shows in the numbers: at least 32 million hectares of commercial agriculture-driven tropical deforestation from 2013-19 was illegal, as were at least 15 percent of timber exports over last two decades.[4] The UN Environment Programme has reported that illegal logging accounts for between 15 and 30 percent of global timber trade, and a larger 50 to 90 percent of trade from tropical countries.[5]

A few countries have made exceptional progress in reducing deforestation or keeping deforestation low, and good governance has been key to this success. For instance, Gabon reduced deforestation by 28 percent in 2021 relative to 2018-20 deforestation rates by implementing measures to combat illegal logging and enforcement of protected areas (see Theme 1 report on overarching forest targets). Indonesia also reduced deforestation following the implementation of moratoria and improved enforcement measures (see sections 1 and 3 below). In Brazil, the decline in deforestation rates between 2004 and 2012 has been partly attributed to the coordinated implementation of the Action Plan for the Prevention and Control of Deforestation in the Amazon region (PPCDAm), which included the creation of protected areas and effective monitoring systems.[6]

## 1. Legal, policy, and institutional frameworks and mechanisms for protection, sustainable use, and management of forests

*Achieving forest goals requires that countries develop coherent laws and policy instruments governing forests and land use and that these are effectively implemented and enforced. This includes having processes and mechanisms in place to enable stakeholders to shape laws and policies, and to allow civil society to support implementation and monitor effectiveness.*

Governments are using a range of legal and policy instruments to influence forest and non-forest land use, such as moratoria, protected areas, environmental and social impact assessments (ESIA) and land use planning (**Table 2**). However, the impacts of these instruments have been mixed. Where the instruments have been designed and implemented through sufficient participation, they have contributed to reducing deforestation and curbing illegalities in forests. For example, a timber export suspension in Lao People's Democratic Republic (Lao PDR) led to a significant drop in trade and export of illegal timber.[7] In Brazil, the Amazon Soy Moratorium (ASM)—initiated by civil society and companies, and later supported by the government—was found to have a substantial effect on deforestation rates. From 2006-16, the first decade after ASM's adoption, deforestation rates on soy-suitable land declined.[8] Some of the success factors for the moratoria were high-level support, centrally coordinated implementation, and strong enforcement (See case study in Theme 2 report on Sustainable production and development).[9]

While countries and territories representing 99 percent of the total forest area have legislation and policies aimed at sustainable use, management, and protection of forests,[10] the effectiveness and implementation of the laws and policies related to forests and forest lands are often insufficient. A 2018 assessment by Chatham House suggests that, across 19 major forest and consumer countries assessed, the quality of forest legal and

institutional frameworks was no better than 'fair,'[b] on average. Significant forest countries like the Democratic Republic of the Congo (DRC), the Republic of the Congo, and Papua New Guinea (PNG) have shown little progress and scored poorly on quality and implementation of legislation, and no countries scored 'very good.'[11]

**Table 2. Examples of common instruments to influence forest outcomes**

| | |
|---|---|
| **Moratoria** | Declaring moratoria on logging activities or concessions in forest areas is a common instrument that governments use to influence forest and non-forest land use. Moratoria can help to reduce deforestation and/or degradation if they are well designed and adequately implemented. Particularly, where the laws governing forests in a country are unclear or conflicting, moratoria can create the enabling conditions to strengthen enforcement efforts.[12]<br><br>A key success factor for moratoria is high-level support for the measure. In 2011, the Indonesian Ministry of Forestry declared a moratorium on primary forest and peatland concessions, but it was weakly enforced.[13] In 2016, the President issued an additional moratorium on peatland drainage that was much more successful. It was followed by a series of implementing regulations that enabled action to be taken and stronger enforcement.[14] In 2019, the president made permanent the moratorium on clearing primary forests and peatlands. However, the moratorium excludes 18% of primary forests, 10% of peatlands, and areas that were covered by permits in 2011, such as for palm oil.[15] The moratorium also lacked consequences for violations.[16]<br><br>In Lao PDR, support from the Prime Minister was a key factor to the partial success of a timber export suspension in 2016.[17] Illegal trades experienced a significant drop in exports after the moratorium was declared, but legislative loopholes left conditions for large-scale logging to continue.[18] |
| **Environmental and social impact assessments** | Environmental and social impact assessments (ESIAs) can, in principle, have a significant positive impact on large-scale infrastructure projects and extractive industries. They are one of the first steps of exploring mitigation strategies for land use planning and project development. Based on the risks identified, decision-makers can develop management plans and set out mitigation measures.[19]<br><br>ESIAs are a regulatory tool with great potential, but they are often poorly designed and weakly enforced. In most cases, they also suffer from poor coordination between multiple site-level assessments. For example, in Liberia, Guinea, and Brazil, there is evidence of overlapping concessions with varying levels of ESIA implementation and uncoordinated development in areas with high road density and forest fragmentation.[20]<br><br>Before approving projects in mining, infrastructure, and other sectors that drive deforestation, most governments require project developers to conduct ESIAs. However, this requirement often does not prioritize forest loss, nor consider all the impacts a project can have. For example, in Malaysia, ESIAs for infrastructure projects only expect developers to consider potential local impacts within a limited spatial scale, without requiring assessment of any potential indirect risks.[21] In most countries, companies developing mining or infrastructure projects need only to present ESIAs when they apply for a license to operate, after an exploration has been completed. This reduces the potential of ESIAs to influence licensing authorities and leads to less effective controls.[22] |

[b] On a scale of failing, weak, fair, good, and very good

**Protected areas**

Governments worldwide use protected areas as a tool for both conservation and the sustainable use of forests. More than 700 million hectares (18 percent of global forests) are classified as protected areas.[23] This figure is increasing. Through the High Ambition Coalition, many countries have committed to increase protected areas in line with the goal to protect a minimum of 30 percent of land and ocean by 2030.

However, the last two decades have seen a rise in protected area downgrading, downsizing, and degazettement (PADDD). Industrial-scale resource extraction and development (including infrastructure and mining) are responsible for 61 percent of PADDD. 74 countries have enacted more than 4,400 PADD events since 1892. Most of the almost 52 million hectares subjected to PADDD between 1892 and 2018 were downgraded since 2000. The emerging hotspots of PADDD are the United States and Brazil.[24] Governments have tempered with regulations for another 166 million hectares.[25]

One-third of protected areas are under intense human pressure. This pressure is caused mostly by informal and illegal activities by small- and large-scale actors.[26] Implementation of protected area legislation has varied across countries, and enforcement is often weak. If appropriately designed and gazetted, and properly enforced, protected area status can limit forest conversion and degradation, while supporting sustainable livelihoods, increasing forest carbon stocks, and contributing to natural regeneration.

**Land use planning**

An inclusive and equitable approach to land use planning and implementation is required to ensure alignment between sustainable development and forest protection and conservation. Most forest countries have land use plans and regulations. However, governments struggle to reconcile land uses and priorities that are not compatible. Inclusive land use planning approaches consider these competing objectives and ensure an equitable approach to sustainable development that incorporates, social needs, livelihoods, and environmental protection.

Some countries have adopted land use regulation and spatial zoning to balance conservation and development at both national and sub-national levels, such as in Southeast Asia and in the Amazon. In Vietnam, the Law on Planning 2017 provides a clear principle on land use planning across national and sub-national levels that harmonizes cross-sectoral planning and priorities.[27] In Colombia, the territorial zoning regulation calls for the zoning of forestry reserves in the Amazon region.[28] In Central Africa, the Central African Forest Initiative (CAFI), is supporting DRC and Gabon in reforming land use planning to incorporate forest preservation.[29] As a result, a new land use planning policy was adopted in DRC in January 2020, and a Land Use Planning Law is being considered by Parliament.[30]

Lack of clarity, as well as overlaps and inconsistencies, are common issues of legal frameworks governing forests and land use in developing countries. There are considerable inconsistencies in sectoral laws, such as in Liberia and Suriname, where laws include robust protections for forests, including protected forest areas that cannot be converted but, at the same time, agriculture and mining laws do not restrict access to any land for agricultural and mining concessions and allow miners to clear forested land for mining activities. Sectoral laws in Liberia also create contradictory institutional responsibilities. For example, under the Minerals and Mining Law, the Minister responsible for mines has authority to allow the clearing of trees and shrubs necessary for the mineral rights holders' activities outside the boundaries of their licenses. This contradicts the National Forestry Reform Law, which designates the Forest Department Authority as the entity responsible for all matters concerning the use of forest, meaning that any clearing of trees and shrubs requires the permission of the forest department.[31] Similarly, in Indonesia, there are overlapping mandates between the central and provincial governments on issuance of permits for agricultural developments, which has reportedly facilitated corruption.[32]

Furthermore, while some developed countries and emerging economies recently developed policies and strategies to promote sustainable management and conservation of forests, the policies contain insufficient targets and lack sufficient details to fully support their implementation. Three examples come from the European Union (EU), China, and the United States (U.S.):

- The EU's Forest Strategy published by the Commission in July 2021 aims to improve the quantity and quality of forests within the EU Member States' by promoting sustainable management of forests with accompanying financial incentives and developing a legally binding instrument for ecosystem restoration.[33] The strategy has, however, failed to address all aspects of sustainable forest management and lacks quantified targets.
- In August 2021, China released its Forestry and Grassland Protection and Development Plan (2021-25), which includes measures to promote governance, the comprehensive reform of collective forest rights, and the reform of state-owned forest farms and state-owned forest areas with an objective to reach a forest coverage rate of 24.1 percent by 2025.[34] Some conservationists argue, however, that the plan sets an insufficient goal of protecting 18 percent of the country's land area by 2025, and that this target should be raised to 25 percent by 2030.[35]
- In April 2022, the President of the U.S. signed an Executive Order to expand federal efforts to address deforestation and forest conservation, specifically to safeguard mature and old-growth forests as well as build in-country and international partnerships to tackle deforestation.[36] Although the Executive Order maps out the current administration's ambition to comprehensively address forest conservation, it lacks details and targets to implement the main goals.

There have been notable developments in the last three years as major tropical forest countries developed laws and policies to enhance traceability in the forest sector. For example, the Republic of the Congo promulgated Forest Code Law No. 33 in 2020 to ensure more sustainable management of forests (see **Box 2**). The law provides for a process of verification of the legality and traceability of forest products and makes it compulsory for logging companies to "certify the administration of their managed concessions or the legality of the products that are exploited there."[37]

However, ambiguities in these laws and policies, if not clarified, will create obstacles for their effective implementation and enforcement. For instance, in Vietnam, a major importer and processor of timber products, issued the Timber Legality Assurance System Decree in 2020 to ensure legality in the supply chain. The scope of the decree is, however, insufficient as verification of wood origin applies only to exporters.[38]

While some countries strengthened their legal frameworks and policies governing forests, major forest countries risk their previous achievements in reducing deforestation by amending and introducing laws that undermine forest protection. A 2019 assessment of nine major tropical countries[c] found that most countries assessed had made progress in strengthening their legal and institutional frameworks on forests over a period of five years.[39] Ghana, for example, rolled out a national timber licensing system; the Republic of the Congo enacted a forest law; and Indonesia made the Forest and Peatland Moratorium permanent (see **Table 2**).

Indonesia has seen a continuous reduction in deforestation since 2017, and a sizeable reduction of 0.26 million hectares (-25%) in deforestation in 2021 in comparison to 2020 (see the Theme 1 report on Overarching forest goals).[40] The decline in deforestation has partly been linked to the implementation of legal

[c] The countries assessed were Brazil, Cameroon, DRC, Ghana, Indonesia, Lao PDR, Malaysia, Papua New Guinea, and the Republic of the Congo

instruments such as the Palm Oil Moratorium, the moratorium on primary forest and peatland conversion, improved fire monitoring and fire prevention efforts, and enhanced law enforcement.[41]

However, a 2021 study showed that Indonesia, as well as four other tropical forest countries—Brazil, Colombia, the DRC, and Peru—have rolled back social and environmental regulations in recent years.[42] In Indonesia, the government has made a series of reforms that have weakened safeguards on forest protection, such as the enactment of the Omnibus Law on Job Creation (**Box 1**).[43] Five provinces in Indonesia could lose all their natural forests by 2056 if the Omnibus Law on Job Creation is implemented.[44] The Indonesian government also did not renew the Palm Oil Moratorium, which expired in September 2021. The moratorium had imposed a three-year ban on new licenses for palm oil plantations. With the moratorium no longer in place, the

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### BOX 1. INDONESIA'S OMNIBUS LAW ON JOB CREATION: A POSSIBLE FOREST SETBACK

To facilitate economic investment and job creation, Indonesia enacted the Omnibus Law on Job Creation. The law amends 76 laws, including environmental protection and forest laws. Key features include:

- Removing the minimum requirement of 30% forest cover in Indonesian islands, leaving it up to each regional government to determine the forest area that should be maintained to prevent environmental degradation. Without the minimum requirement, widespread conversion of forests could occur.
- Removing strict liability for businesses whose concession areas burned, making it harder to prove and prosecute companies that set their lands on fire for clearing. Previously, companies were liable for forest fires in their concessions even without proof of the company's fault—known as strict liability. According to Greenpeace, clearing forests for commercial purposes has led to 4.4 million hectares being burned between 2015 and 2019 in Indonesia and the removal of strict liability is likely to increase this rate of destruction.[45]
- Placing new restrictions on actors involved in environmental assessment processes and consultations related to land use. It stipulates that only stakeholders directly affected by a proposed land use activity will be relevant to the environmental assessment process, neglecting wider community participation in most of the decision-making on land use in Indonesia.[46] The law has also changed the requirements for environmental decision making in land use such that announcements will be made through electronic, web-based means, excluding some stakeholders and communities from accessing announcements about land uses.[47]
- Allowing companies operating illegally inside forests to legitimize their operations by obtaining permits retroactively and paying fines.
- Eliminating the requirement for plantation operators to apply for a forest conversion permit and re-designating protected forests as "forest areas for food security." Implementation of the Food Estates Initiatives in Indonesia has been clouded by secrecy and lack of public participation. The government announced three megaprojects under the food estate Program.[d] These could lead to the conversion of two million hectares of forest to food estates,[48] but little information was made available to the public about these projects.
- Stating, in Articles 110A and 110B, that every activity that is conflicting with the purpose of forest can still operate or be legalized as long as it provides taxes or revenue to the government[49]—a clause that will undermine any no-deforestation policies, including moratoria.

[d] The planned new food estate programs announced by the Indonesian government in 2020 are in the island of Borneo Island, another in New Guinea island, and a third one in North Sumatra.

country risks losing 52 million acres (21 million hectares) of forest, an area about half the size of California.[e] There have also been reports stating that the "food estate program" in Indonesia is likely to transform nearly 2 million hectares of permanent forests into other land uses without contributing to food security locally.[50]

## 2. Demand side measures and international engagement to address deforestation abroad

*Export demand accounts for about 25 percent of agriculture-driven deforestation.[51] In Asia and Latin America, export-driven demand drives at least 35 percent of agriculture-driven deforestation. Through consumption of imported products, residents of G7 countries, are responsible for, on average, forest loss of 58 cubic meters per person per year.[52]*

*Demand-side measures to incentivize the sustainable use and protection management of forests within supply chains are therefore an important part of efforts to address deforestation. These measures need to be combined with other forms of international engagement (i.e., bilateral and multilateral cooperation and trade) to transform current land-use practices.*

The proportion of illegal trade in wood-based products has declined in the past 20 years globally, in part due to demand-side regulations aimed at reducing illegal timber trade. Conservative estimates for the volume of internationally traded timber products suggest that the volume of illegal exports has declined slightly, from 53 to 40 million cubic meters between 2000 and 2018 (based on an analysis for of 37 major timber exporting countries[53]), while the proportion of illegal trade is estimated to have declined from at least 23 percent in 2000 to 8 percent in 2018.[54] One factor underlying the decline in this proportion has been the introduction of legislation that prohibits the trade in illegal timber and wood-based products and places due diligence obligations on operators. The U.S. Lacey Act and EU Timber Regulation (EUTR) were the first to be enacted.

Evidence shows that both U.S. Lacey Act and the EUTR have had some positive impacts in curtailing illegal imports of timber. The Lacey Act was found to have contributed to reduced illegal imports into the U.S. between 2008 and 2013.[55] The Forest Law Enforcement, Governance and Trade (FLEGT)/EUTR Fitness Check published by the European Commission in 2021 found that the EUTR (together with the FLEGT Regulation) had been moderately successful in prohibiting placement of illegally harvested timber in the EU market.[56] However, an assessment by Forest Trends shows gaps in the implementation of the EUTR, as companies subject to EUTR are indirectly sourcing timber from countries with a high risk of illegal logging while in the UK, the imports from high-risk countries have increased.[57] This has been attributed to inconsistent enforcement by member states as well as insufficient sanctions and penalties[58] (see Section 3).

Australia, Japan, UK, China, and Vietnam—which, together with the U.S. and EU, account for over 65 percent of illegal timber exports by volume[59]—as well as Malaysia, Indonesia, and Switzerland,[60] have all enacted laws to ensure legality of timber imports and products in their markets. However, there are considerable gaps in the design of some of these legislations. For instance, while Japan's Clean Wood Act aims to promote the use and distribution of legally harvested wood and wood products, it is not designed to crack down on distribution of illegally harvested wood and there are no penalties for trading in illegal wood and wood products.[61] China's Forest Law, which was amended in 2019 to include a ban on trade of illegally sourced timber, could have a significant effect considering that up to 51 percent of China's tropical timber imports in the 2010s were from countries with documented illegal deforestation.[62] However, the law lacks clarity on the

[e] This figure is based on calculations by Forest Watch Indonesia (FWI).

scope of prohibited products covered, how the amended law will be implemented, and if the responsibility for compliance will sit with the company.

Countries responsible for at least 48 percent of the deforestation associated with international trade are enacting or recently enacted legal frameworks to address import of forest-risk commodities, but the measures are yet to be implemented. The UK, EU, and U.S., large importers of products associated with deforestation, have enacted or are in the process of enacting legislation and other trade measures that would curb the import of commodities from deforested land:

- The UK enacted the Environment Act in 2021, which prohibits the use of forest risk commodities and sets out due diligence requirements for businesses which are required to prove that their products have not been linked with illegal deforestation.[63] The implementing legislation for this act is still under development.
- In November 2021, the EU Commission proposed a regulation[f] to prohibit the import of products linked to deforestation and ensure that only deforestation-free and legal products are placed in the EU market—thus, a broader approach than that adopted by the UK.[64] The details of the law are to be negotiated in the last quarter of 2022. Issues under discussion include provisions on human rights and the rights of IPs, the involvement of civil society in assessing country risks, and the scope and responsibilities of a proposed EU forest observatory.
- The U.S. Congress is considering a bill for the enactment of the Forest Act. If passed, it would prohibit the import of products made wholly or in part of specific commodities produced on land undergoing illegal deforestation.[65] The bill was introduced in the Senate in October 2021, but there has not been much progress on passing it into law since then.[66]

Considering that approximately three quarters of the commodity-driven deforestation is due to domestic demand, stronger domestic measures are also critical. One growing area of action in the timber sector has been strengthening public procurement frameworks to increase demand for legal and sustainable products and reforming domestic markets through providing support and capacity building for small and medium enterprises (SMEs). A Chatham House report found that 7 out of 19 assessed countries have procurement policies relating to timber.[67] However, the same report highlights that that the policies could be much more effective if resources for training were made available and compliance monitoring was enhanced.

Colombia is implementing a strategy to standardize and monitor public procurement through a single virtual platform, including public procurement of legally sourced wood. The country has also developed a scheme where forest sector enterprises can undergo a voluntary process of legality verification, increasing their attractiveness to buyers and consumers in more demanding domestic and international markets.[68]

Experience from the EU's FLEGT action plan also shows that partnership agreements have contributed to more coherent legal and regulatory frameworks as well as improved transparency, accountability, and public participation in partner countries. Analysis by the Center for International Forestry Research (CIFOR) finds that the FLEGT Voluntary Partnership Agreements (VPAs) have led to regulatory and legal streamlining, which has in some cases led to a decrease in illegal logging and trade.[69] Specifically, assessments find that through VPAs, monitoring systems have been strengthened, improving identification of irregularities in timber trade.

A 2021 study on the contribution of FLEGT VPAs in Cameroon, Ghana, and Indonesia also found that FLEGT VPAs have led to more coherent legal and regulatory frameworks as well as participatory policymaking in

[f] A regulation on deforestation-free products ("deforestation-free law")

forest governance and that illicit timber trading activities could be more easily exposed.[70] Additionally, the implementation of FLEGT VPAs in Ghana,[71] Cameroon,[72] and Indonesia[73] has improved transparency and accountability, as more forest-related information has become available to the public and civil society. The Republic of the Congo's Forest Code, which was passed with extensive civil society engagement[74] (**Box 2**) and Vietnam's Decree 102/2020/ND-CP enacting the Timber Legality Assurance System are both outcomes of FLEGT VPAs.[75]

FLEGT VPAs have also positively contributed to law enforcement in VPA partner countries. A 2022 Chatham House report found that Ghana's digital wood tracking system has been enhanced through the FLEGT VPA and that fraud can be traced and tracked.[76] In Cameroon, training was provided for ministry staff, prosecutors, customs officials, small and medium enterprises, and civil society regarding the country's timber legality assurance system[77] and efforts have been made to increase resources and capacities for government and law enforcement staff.[78] However, the impacts of the FLEGT VPA in Cameroon have been limited. The traceability system is not yet operational, enforcement on the ground is weak, deforestation and conversion continue, and the forest legal framework lacks alignment and protections for IPs and LCs.[79]

## 3. Law enforcement: Detection, prosecution, and enforcing penalties on forest crimes and tackling corruption

*Adequate law enforcement is a key component of forest governance. Forest crimes and illegal activities increase the likelihood of deforestation and forest degradation, deny governments revenue, and undermine the rule of law.*

At least 32 million hectares of tropical forests were illegally converted to commercial agriculture from 2013-19 and at least 15 percent of timber exports in 37 countries were illegal.[80] A 2020 report by Forest Trends found that at least 69 percent of the conversion of tropical forests for commercial agriculture from 2013-19 violated national laws and regulations.[81] These figures are likely conservative.

Forestry crimes and illegal logging accounted for the largest share of environmental crimes in 2018, with the illegal trade in timber estimated to be worth USD 51-152 billion.[82] A new report by Chatham House[83] suggests that the monetary value and quantity of illegally traded forest-based products are on the rise. In 2018, it was estimated that USD 7-30 billion of timber exports, between 5 and 23 percent of the annual market, were illegal. Illegal exports have increased from PNG, the Solomon Islands, and Russia—especially from Russia's eastern regions, where illegal practices are widespread.[84] Illegal practices continue to dominate in some countries in central Africa that are exporting to markets in Asia, with illegal actors exploiting loopholes and out-maneuvering existing systems.[85]

While many countries have laws, tools, and institutions to tackle crimes in forests, gaps exist in legal frameworks—or laws are non-existent—preventing effective enforcement. A 2021 study found that the penalties prescribed for forest crimes in six European countries[9] are too lenient to act as deterrents.[86] For example, in Slovakia illegal logging is not defined in law and in Romania the illegal transport of wood on public roads without documentation does not necessarily lead to criminal sanctions, regardless of whether the origin of timber is illicit or not.[87]

Complex requirements in the laws and excessive bureaucratic procedures also make enforcement challenging. A key barrier to enforcement is the burden and standard of proof. In Belgium, when forest

[9] The countries studied are Belgium, France, Bulgaria, Romania, Slovakia, and Ukraine.

crimes are prosecuted under criminal law, the burden of proof for failing to carry out due diligence lies with the public prosecutor.[88] Prosecutors in Romania are faced with challenges such as insufficient and unactionable evidence, the perceived triviality of forest crimes, and prolonged trial periods. When sanctions are imposed on forest crimes in the country, the sanctions are negligible under criminal law.[89] Further evidence shows that politicians with links to organized crime networks use their power to make important forestry cases hard to investigate.[90] In the U.S., while the Lacey Act has sufficiently dissuasive penalties, the high burden of proof required for criminal enforcement actions under the Lacey Act has led to a relatively low number of prosecutions.[91]

The EU Timber Regulations (EUTR) are unevenly enforced among key member states, and the sanctions applied in some member states are not sufficiently dissuasive. For example, Germany denied access of teak from Myanmar in its market due to issues with legality of the timber source. The German police and customs seized a total of 111 cubic meters of teak worth more than EUR 1 million from Myanmar being smuggled via Croatia.[92] In the Netherlands, the courts and enforcement authorities have ruled in favor of tracing the lifecycle of wood from stump to shipping to determine the legality of teak from Myanmar and imposed penalties on noncompliant companies.[93] In France, breaches of the EUTR have been met with fines. However, the sanctions applied are not effective and dissuasive, and often applied only in cases of repeated shortcomings and after warnings.[94,h] There is also evidence that Italian traders are not penalized for noncompliance with the EUTR.[95]

Enforcement has improved in some tropical forest countries. In Lao PDR, enforcement efforts since 2015 have led to the uncovering of unlawful timber-related activities, prosecution of at least 45 cases of illegal timber harvesting, seizure of over 2,600 cubic meters of illegally harvested wood, and shuttering of over 1,600 wood processing plants.[96] Exports of illegal timber from Lao PDR to China and Vietnam have also dramatically reduced as a result of enforcement of export bans and restrictions.[97] In Indonesia, the reduction of deforestation has been attributed partly to the stronger enforcement of the moratorium on new licenses in primary forests and peatlands, as well as better enforcement of peatland management regulations.[98] Furthermore, enforcement efforts that started in Indonesia in 2018 led to companies being investigated, sizeable volumes of timber seized, and jail terms for those involved in illegal forest activities.[99]

At the same time, concerns have been raised about recent developments that have weakened enforcement efforts in Indonesia and Brazil. In Indonesia, the Omnibus Law on Job Creation ends companies' liability for forest fires, instead requiring a permit holder to "prevent and control forest fires in its working areas"[100] (see **Box 1**). In Brazil, a historic slow-down in deforestation between 2004-12 has been attributed in part to increased budget for enforcement agencies. However, the budget for environmental enforcement was slashed by 27.4 percent in 2021.[101]

Corruption is widespread in many forest countries. Nearly half of the world's forests are in regions that Transparency International finds to have rampant corruption.[102] A 2020 Forest Trends report links the increasing deforestation in the tropics, including high levels of illegality in the Andean Amazon, to corruption and weak law enforcement.[103]

Systematic corruption has allowed the illegal tropical timber trade to thrive—in particular, trade in valuable species such as rosewood. Reporting has uncovered corrupt schemes to import illegal timber from the Congo Basin and Nigeria to China and Vietnam.[104] One such investigation by Environmental Investigation

[h] This is based on an assessment of EUTR implementation in 15 member states and the UK. The member states assessed are Austria, Belgium, Bulgaria, Croatia, Denmark, France, Germany, Hungary, Italy, Netherlands, Portugal, Romania, Slovakia, Spain, Sweden

Agency (EIA) revealed approximately 1.6 million rosewood trees were illegally harvested in Senegal and exported through The Gambia to China between 2012-20, with involvement of the Senegalese army and high level Gambian officials, despite export bans in both countries.[105] Similarly, the Cameroon-Vietnam illegal trade in tropical logs has reportedly thrived due to corruption.[106]

# 4. Tenure security, rights protection, and empowering Indigenous Peoples (IPs) and local communities (LCs)

*IPs and LCs manage at least half of the planet's land[i] and these lands provide ecosystem services worth at least USD 1.16 trillion per year.[107] IPs and LCs are effective forest stewards.[108] A report by World Resources Institute found that deforestation rates were 2.8 times lower on average within "tenure-secure"[j] Indigenous lands than outside of them.[109]*

*Tenure security can be strengthened through the legal recognition of IPs and LCs' rights to land and resources, and with protection against encroachment from outsiders. Tenure security can be supported and enabled by laws that recognize a broad set of rights,[k] limited public interest exceptions, and access to mechanisms to enforce those rights. In addition, broader IP and LC rights include a guarantee of Free, Prior and Informed Consent (FPIC) for the development of projects (commercial, as well as conservation and restoration projects). Other measures for empowering IPs and LCs include providing finance to support their communities and livelihoods and strengthening their capacity to monitor and ensure response to illegalities taking place on their land.*

Over 140 countries have committed to recognize the rights of IPs and LCs in accordance with relevant national legislation and international instruments.[110] Governments and organizations have pledged financial resources totaling USD 1.7 billion to support advancement of IPs and LCs' forest tenure rights[111] (see **Table 1**). For the proposed EU regulation on deforestation, the EU Parliament proposed including criteria on the existence and enforcement of laws related to IPs and LCs' rights as part of the risk assessment for countries, while a proposed EU observatory would monitor land rights.[112]

Nevertheless, tenure insecurity is persistent in many countries. At least 50 percent of IPs and LCs' lands and territories globally are not legally recognized. A report by RRI assessing 42 countries covering more than half of global land area estimates that at least 1.49 billion hectares are held by IPs and LCs without legally recognized rights. Between, Asia, Africa, and Latin America, Africa has the largest portion of unrecognized community lands. Almost 300 million hectares of community lands are estimated to remain unrecognized in the Central African Republic, the DRC, and Sudan alone.[113] Implementing existing laws in DRC could increase legally recognized community forest tenure by 70 million hectares.[114] In Asia and Latin America, nearly a quarter of IPs' and LCs' land is not legally recognized (23 and 24 percent, respectively).[115]

In the last two years, the Republic of the Congo and the DRC developed laws and adopted reforms to secure land tenure rights and promote IPs and LCs rights, though these have yet to be implemented. The Republic of the Congo recently passed a law allowing IPs and LCs to legally hold and manage their forests. The Forest

[i] A report by WWF and partner organizations in 2021 consolidated georeferenced data indicating that at least 32 percent (43.5 million km2) of the world's land is owned, governed, or customarily managed by IPs and LCs. This is almost certainly an underestimate as, despite significant advances, mapping and documentation of Indigenous Peoples' and local communities' territories remains incomplete in many countries. Other estimates incorporating non-georeferenced data suggest at least 50 percent of the world's land is likely to be held by Indigenous Peoples and local communities.
[j] Tenure secure lands are those that are legally recognized by the government and protected from external threats and competing claims.
[k] A bundle of rights in the context of land rights may include the rights of access, use, transfer, and to exclude outsiders. Rights to due process and compensation and the duration of recognized rights are also critical for secure tenure. The size of these bundles varies depending on tenure type, e.g., the bundle of rights under ownership or freehold tenure is commonly larger than the bundle under leasehold tenure or land designated by government for IPs and LCs

Code 2020 grants forest management rights to forest dependent communities and requires that benefit sharing schemes are negotiated directly by affected communities. To ensure the involvement of IPs and LCs in forest governance, the Forest Code introduced the concept of FPIC in the Republic of the Congo, and further requires that forest management plans are examined and approved by two multistakeholder committees composed of, among others, IPs and LCs.[116] Still, the implementing regulations have yet to be developed, despite the law having been enacted more than two years ago.

In the DRC, a law to protect and promote the rights of the Indigenous Pygmy peoples was adopted by the National Assembly in June 2021 and by Senate in 2022. At the time of drafting this report, the proposed law was awaiting presidential assent. The law is intended to address land rights, provide free education and assistance in courts, and to establish a national fund for activities aimed at promoting IPs and LCs rights.[117]

Several ongoing reforms in other countries also have the potential to recognize IPs and LCs' land tenure and strengthen the protection of IPs and LCs rights. In 2019, for example, the Peruvian president pledged to grant titles to all communities in the country by 2021 but the goal has yet to be achieved. As of January 2020, around 40 percent of communities—or 887 out of 2268—had formal titles to land and had been included in the public land registry.[118] Panama is in the process of drafting its national regulatory framework on IPs' FPIC. In Uganda, the Constitutional Court handed down a landmark judgement in August 2021[119] that serves to protect the rights of forest-dwelling Indigenous Batwa Pygmies. While recognizing the plight suffered by the Batwa for years, the court ordered the government to recognize the right of ownership of the land by the Batwa community.[120] The decision has, however, not been implemented. The government has since appealed the decision and media reports indicate that the government does not plan to comply with the Constitutional Court's judgment. An official of the Uganda Wildlife Authority has been quoted stating that the status quo will be maintained and there is no plan to compensate the Batwa community in accordance with the court.[121]

Meanwhile, a number of major forest countries have weakened the legal protections of IPs and LCs' rights, and there are numerous examples of human rights violations in and around IPs and LCs' territories. A recent report studying the protection of IPs and LCs' rights in five countries – Brazil, Colombia, DRC, Indonesia, and Peru – during the COVID-19 period, highlighted the weakening of IP and LCs' rights protections.[122] In all five countries, there have been legislative and regulatory changes as well as practices that violate IPs' rights, such as exclusion of IPs from decision-making, illegal mining and logging in Indigenous territories, and increased violence against IPs' rights defenders.

Violence against environmental defenders also continues to increase across the world. According to the Global Witness report, at least 200 land and environmental defenders were killed in 2021, with more than half of the killings taking place in Mexico, Colombia, and Brazil.[123] A significant number of attacks against IPs has also been recorded. In 2021, over 40 percent of all the fatal attacks targeted IPs, despite them making up only 5 percent of the world population. Most of these attacks were in Mexico, Peru, Colombia, Nicaragua, and the Philippines.[124] For example, four Indigenous leaders active in defending land rights were killed in Peru after receiving threats, to which the government had failed to respond.[125]

## 5. Transparency, public participation, and access to justice

*IPs and LCs living in forest areas play a critical role in managing forests sustainably. Research suggests that, when granted control, these stakeholders are better suited to protect forests than companies or governments.[126] Civil society and the public also have a critical role to play in overseeing government decisions. It is therefore critical to include forest-dependent communities, civil society, and the general public in decision-making about forests and forest lands,*

*including shaping and implementing laws and policies. For IPs and LCs specifically, a proper process of Free, Prior and Informed Consent (FPIC) is essential before decisions are made related to their territories. Inclusive and participatory forest-decision-making requires access to information and transparency, which also increases confidence in the system and is fundamental in tackling corruption.*

*Access to justice is also a key component for the proper implementation of laws. Access to justice gives citizens, IPs, LCs, and civil society a crucial mechanism to challenge government decisions, as well as to ensure their rights are respected. Having access to justice means that citizens have judicial and quasi-judicial systems available to them, they have legal standing to access those systems, and do not face unreasonable legal or financial barriers to accessing the systems.*

### 5.1 Transparency and access to forest-related information

A recent Chatham House report highlights that transparency and accountability systems in nine tropical forest countries have improved, with better availability of and access to forest-related data and legal texts.[l] Similarly, a CIFOR report found improved transparency and accountability in Ghana,[127] Cameroon,[128] and Indonesia.[129] Studies show that more forest-related information has become available to the public and civil society. Stakeholders have been given a greater role for monitoring legality and identifying irregularities in timber trade and regulations.[130] The improved transparency and accountability has been due to investment in institutions and timber traceability systems as well as requirements under VPAs to publish and make laws more accessible.

In Latin America and the Caribbean, the Escazú Agreement[m] could greatly enhance public access to forest-related information and participation. The treaty guarantees implementation of the right of access to environmental information, public participation, and access to justice in environmental matters in Latin America and Caribbean. Signatories commit to virtual, universally accessible clearinghouses for information about environmental policy development and decision-making, such as legislative, administrative and policy measures, codes of conduct and good practices[131] 24 countries in Latin America and Caribbean have signed the Agreement, which entered into force in 2021,[n] but is yet to be implemented by signatories.[132] Notably absent is Brazil, which hosts the largest share of forests in the region.

### 5.2 Participation in decision-making

A growing number of countries have adopted more inclusive approaches to policy development, implementation, and enforcement. These positive developments reflect both growing capacity and expertise within civil society and government recognition of this capacity. Developments have resulted in improvements in policies and laws, and enhanced accountability of government and the private sector in the Republic of the Congo, Ghana, and Cameroon.

The Republic of the Congo's Forest Code, for example, was developed with extensive civil society engagement, allows for participation of civil society and IPs and LCs, and legally recognizes the role of civil society's independent forest monitoring[133] (**Box 2**). In Lao PDR and Vietnam, VPA processes led to increased participation of civil societies in forest policy discussions.[134] In Ethiopia, ongoing deforestation prompted the national government to establish multi-stakeholder forums to govern the forestry sector more effectively. Subsequent studies show that these institutions have improved participation and can address power imbalances among stakeholders.[135]

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[l] The nine countries are Brazil, Cameroon, DRC, Ghana, Republic of the Congo, Indonesia, Laos, Malaysia, and Papua New Guinea

[m] The Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters

[n] The Agreement has been signed by 24 countries but only 12 have ratified. The following countries have ratified: Antigua and Barbuda, Argentina, Bolivia, Ecuador, Guyana, Mexico, Nicaragua, Panama, Saint Vincent and the Grenadines, Saint Kitts and Nevis, Saint Lucia, and Uruguay

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**BOX 2. THE REPUBLIC OF THE CONGO'S NEW FOREST CODE**

In July 2020, after eight years of negotiations among various stakeholders, the Republic of the Congo adopted a new Forest Code. The new law reforms the country's existing legislation on forestry and forest management. It introduces timber certification and verification of legality into the country's forest governance. It also strengthens the participation and position of Indigenous and local communities, formally integrating the concept of Free, Prior and Informed Consent (FPIC). It includes provisions on community benefit-sharing in logging revenues, local development funds, and community forests.

The Forest Code also includes legal recognition of independent monitoring of forests by civil society and local communities and ensures that these stakeholders have access to justice to redress any violations. The emphasis on local stakeholder engagement under the Forest Code reflects the strong involvement and input of civil society organizations in its development process. According to ClientEarth, 65 percent of the inputs civil society in drafting the Forest Code were either partially or completely adopted.

The Forest Code allows for the participation of civil society, IPs, and LCs in forest governance, such as in the commission in charge of adjudicating forest-concessions and as part of a multistakeholder committee that examines and adopts forest management plans. Furthermore, civil society's role in independent forest monitoring is legally recognized.

### 5.3 Public, private, and civil society collaboration at the jurisdictional and landscape scale

There have been several recent examples of improvements in access to justice in the EU, Ecuador, and India, resulting in broadened criteria for standing, that is, the right to file a case before judicial and quasi-judicial bodies. In 2019, the Aarhus Convention Compliance Committee found that many of its Parties, such as the UK, Austria, and the EU, had not remedied the legal or administrative limitations that restrict proper access to justice in their jurisdictions. Particularly, the EU was found to violate the Aarhus Convention by not allowing members of the public to challenge public interest decisions of EU institutions before the European courts. In October 2021, the EU adopted a key amendment to the Aarhus Convention regulation to broaden the legal standing beyond NGOs, lifting the previous restrictions on standing.[136] In September 2022, the European Parliament voted on the proposed deforestation-free law and made proposals that would make it possible for IPs and LCs to bring evidence and complaints against non-compliance with proposed regulations before European authorities and courts.[137] However, the proposed regulation needs to go through negotiations. It is unknown whether the proposals by the members of the European Parliament will be adopted.

Another key recent development took place in Ecuador, where in 2021 the Constitutional Court upheld the rights of nature enshrined in the Constitution to protect Ecuadorian rainforest. The court found that mining in protected areas violated the constitutional rights of nature and consequently, the government would have to revoke the mining licenses. The decision has implications not only on forests protection but also in broadening legal standing of who can approach courts to protect forests (**Box 3**)**.** Similarly, in April 2022, a court decision by the highest court in Tamil Nadu, one of India's 28 states, recognized the rights of nature and prevented a protected forested area in the state from becoming compromised. The court granted the forest rights to nature to invoke better protection and conservation efforts by government agencies.[138]

CASE STUDY

### BOX 3. RIGHT OF NATURE IN ECUADOR

The right of nature is a legal concept that grants legal personality to ecosystems such that the ecosystem has the right to sue or defend itself against harm in a court of law. In practice, an ecosystem with a right of nature can be legally represented by a guardian, such as an NGO or community, to act on its behalf and in its interest. An ecosystem could be endowed with legal rights, such as the right to exist, flourish, and naturally evolve without human-caused disruption.[139]

Ecuador was one of the first countries to recognize the rights of nature through its 2008 Constitution. In a decision delivered by the Constitutional Court in 2021, the Supreme Court found that a specific mining activity in the protected area of *Los Cedros* would violate the constitutional right of nature. As a result, the government will have to revoke the relevant mining permits in this case and future developments are likely to require much stronger precautionary measures before permits can be granted.

The decision is likely to have substantial positive impacts for forest protection in Ecuador. It creates an important precedent, giving concrete meaning to the 'right of nature' provisions in Ecuador's 2008 Constitution and allowing courts to restrict developments that may harm fragile ecosystems.

There have also been noteworthy court cases in Brazil that sought to address deforestation, showing that relevance of access to justice in providing oversight to executive decision-making. In March 2022, the Brazilian Supreme Court heard seven cases about deforestation and protection of the Amazon rainforest. The cases were brought by NGOs, civil society, and political parties and vary in their aims. Some cases, for example, call for the implementation of policies such as the Action Plan for the Prevention and Control of Deforestation in the Amazon region (PPCDAm) to meet the deforestation targets established under Brazil's Nationally Determined Contribution. Others challenge the government's failure to properly manage the Amazon Fund and request the reactivation of investments to combat and monitor deforestation in the Amazon Forest.[140] While final decisions are still pending, the Brazilian Supreme Court ruled in early April that the Federal Government should resume the implementation of the PPCDAm.[141] In July 2022, the Supreme Court acknowledged the enormous increase in deforestation and subsequent climate change impacts. As a result, the court ordered the Federal Government to reactivate the national Climate Fund and the Amazon Fund. The ruling is the first worldwide to recognize the Paris Agreement as a human rights treaty.[142]

In the UK and Indonesia, governments are considering reviewing or have revised their laws in a way that limits access to justice. In the UK, for example, an ongoing expert review of the judicial review process could have implications on access to justice. Judicial review is considered an important means for environmental defenders and members of the public to challenge any public decision. It allows them to question decisions that are made unlawfully or may harm the environment. Through the current assessment, the government may revise the rules on judicial review. This could significantly limit the public's ability to bring issues or claims of wrongdoing to the court.[143] In Indonesia, the Omnibus Law could also have implications on access to justice. Abolishing environmental licenses for land-use activity will effectively close off opportunities for the public to file lawsuits against administrative decisions. This will prevent local community from challenging business activities in their direct environment.[144]

# Endnotes


1. Pendrill, F., Gardner, T. A., Meyfroidt, P., Persson, U. M., Adams, J., Azevedo, T., et al. (2022). Disentangling the numbers behind agriculture-driven tropical deforestation. *Science*, *377*(6611), eabm9267. https://doi.org/10.1126/science.abm9267.

2. Davis, C., Williams, L., Lupberger, S., & Daviet, F. (2013). *Assessing Forest Governance*. https://www.wri.org/research/assessing-forest-governance; Kishor, N., & Rosenbaum, K. (2012). *Assessing and Monitoring Forest Governance: A User's Guide to a Diagnostic Tool*. https://www.profor.info/sites/profor.info/files/AssessingMonitoringForestGovernance-guide.pdf.

3. Hoare, A., & Kanashiro Uehara, T. (2022a). *Establishing fair and sustainable forest economies: Lessons learned from tackling illegal logging*. https://doi.org/10.55317/9781784135386.

4. Dummett, C., & Blundell, A. (2021). *Illicit harvest, complicit goods: The state of illegal deforestation for agriculture*. https://www.forest-trends.org/wp-content/uploads/2021/05/Illicit-Harvest-Complicit-Goods.pdf.

5. Nellemann, C. (2012). *Green carbon, black trade: Illegal logging, tax fraud and laundering in the world's tropical forests*. https://wedocs.unep.org/handle/20.500.11822/8030;jsessionid=9C7EFB3550C0A3DD54D39BD0D08FFA4D

6. West, T. A. P., & Fearnside, P. M. (2021). Brazil's conservation reform and the reduction of deforestation in Amazonia. *Land Use Policy*, *100*, 105072. https://doi.org/10.1016/j.landusepol.2020.105072.

7. Forest Trends. (2021). *Timber Legality Risk Dashboard: Lao People's Democratic Republic*. https://www.forest-trends.org/wp-content/uploads/2022/01/Lao-PDR-Timber-Legality-Risk-Dashboard-IDAT-Risk.pdf.

8. Heilmayr, R., Rausch, L. L., Munger, J., & Gibbs, H. K. (2020a). Brazil's Amazon Soy Moratorium reduced deforestation. *Nature Food*, *1*(12), 801–810. https://doi.org/10.1038/s43016-020-00194-5.

9. Heilmayr, R., Rausch, L. L., Munger, J., & Gibbs, H. K. (2020b). Brazil's Amazon Soy Moratorium reduced deforestation. *Nature Food*, *1*(12), 801–810. https://doi.org/10.1038/s43016-020-00194-5.

10. United Nations Department of Economic and Social Affairs & United Nations Forum on Forests Secretariat. (2021). The Global Forest Goals Report 2021. https://www.un.org/esa/forests/outreach/global-forests-goal-report-2021/index.html.

11. Forest Governance and Legality. (n.d.). October 18, 2022, https://forestgovernance.chathamhouse.org/.

12. NYDF Assessment Partners. (2021). *Taking stock of national climate action for forests: Goal 7 Progress Report*. https://forestdeclaration.org/wp-content/uploads/2021/10/2021NYDFReport.pdf.

13. Chen, B., Kennedy, C. M., & Xu, B. (2019). Effective moratoria on land acquisitions reduce tropical deforestation: evidence from Indonesia. *Environmental Research Letters*, *14*(4), 044009. https://doi.org/10.1088/1748-9326/ab051e.

14. Seymour, F. J., Aurora, L., & Arif, J. (2020). The Jurisdictional Approach in Indonesia: Incentives, Actions, and Facilitating Connections. *Frontiers in Forests and Global Change*, *3*, 503326. https://doi.org/10.3389/ffgc.2020.503326.

15. EIA. (2019, August 16). Indonesia's moratorium on clearing forests and peatlands. https://eia-international.org/news/indonesias-moratorium-on-clearing-forests-and-peatlands-now-permanent-but-excludes-vast-areas/.

16. EIA. (2019, August 16).

17. Forest Trends. (2021).

18. The Star. (2021). Laos: Illegal logging remains a big issue despite PM's order. September 14, 2022, https://www.thestar.com.my/aseanplus/aseanplus-news/2021/02/08/laos-illegal-logging-remains-a-big-issue-despite-pms-order.

19. [1] NYDF Assessment Partners. (2020). *Balancing forests and development: Addressing infrastructure and extractive industries, promoting sustainable livelihoods*. https://forestdeclaration.org/resources/balancing-forests-and-development-2020-nydf-assessment-report/

20. Maddox, T., Howard, P., Knox, J., & Jenner, N. (2019). *Forest-Smart Mining: Identifying Factors Associated with the Impacts of Large-Scale Mining on Forests*. https://openknowledge.worldbank.org/handle/10986/32025.

21. Alamgir, M., Campbell, M. J., Sloan, S. & Phin, W. E. (2018). *Road Risks & Environmental Impact Assessments in Malaysian Road Infrastructure*

*Projects*. https://www.global-roadmap.org/wp-content/uploads/2018/04/Alamgir-et-al-2018-JURUTERA-February-.pdf.
[22.] NYDF Assessment Partners. (2021).
[23.] FAO, U. (2020). *The State of the World's Forests 2020*. https://doi.org/10.4060/ca8642en.
[24.] PADDD tracker. (2022). September 15, 2022, https://www.padddtracker.org.
[25.] Golden Kroner, R. E., Qin, S., Cook, C. N., Krithivasan, R., Pack, S. M., Bonilla, O. D., et al. (2019). The uncertain future of protected lands and waters. *Science*, *364*(6443), 881–886. https://doi.org/10.1126/science.aau5525.
[26.] Jones, K. R., Venter, O., Fuller, R. A., Allan, J. R., Maxwell, S. L., Negret, P. J., et al. (2018). One-third of global protected land is under intense human pressure. *Science*, *360*(6390), 788–791. https://doi.org/10.1126/science.aap9565.
[27.] The Socialist Republic of Vietnam. *Law on Planning*., Pub. L. No. Law No. 21/2017/QH14 (2017).
[28.] Pacheco, P., Mo, K., Dudley, N., Shapiro, A., Aguilar-Amuchastegui, N., Ling, P. Y., et al. (2021). *Deforestation fronts: Drivers and responses in a changing world*. https://wwfint.awsassets.panda.org/downloads/deforestation_fronts___drivers_and_responses_in_a_changing_world___full_report_1.pdf.
[29.] Central African Forest Initiative (CAFI). (2021). *CAFI Trust Fund 2021 Consolidated Annual Report*. https://mptf.undp.org/sites/default/files/documents/CAFI%202021%20Consolidated%20Annual%20Report.pdf.
[30.] Central African Forest Initiative (CAFI). (2021).
[31.] ClientEarth. (2018). *Addressing the risks of a weak legal framework governing forest conversion in Liberia*.
[32.] Gellert, P. K., & Andiko. (2015). The Quest for Legal Certainty and the Reorganization of Power: Struggles over Forest Law, Permits, and Rights in Indonesia. *The Journal of Asian Studies*, *74*(3), 639.
[33.] European Commission. (n.d.). New EU forest strategy for 2030. https://environment.ec.europa.eu/strategy/forest-strategy_en.
[34.] FAOLEX Database: Forest and Grassland Sectoral Development Plan (2021-2025). (n.d.). https://www.fao.org/faolex/results/details/en/c/LEX-FAOC208094.
[35.] Five Year Plan for forests and grassland protection released. (2021, August 19). October 18, 2022, https://chinadialogue.net/en/digest/five-year-plan-for-forests-and-grassland-protection-released/.
[36.] The White House. (2022, April 22). FACT SHEET: President Biden Signs Executive Order to Strengthen America's Forests, Boost Wildfire Resilience, and Combat Global Deforestation. October 18, 2022, https://www.whitehouse.gov/briefing-room/statements-releases/2022/04/22/fact-sheet-president-biden-signs-executive-order-to-strengthen-americas-forests-boost-wildfire-resilience-and-combat-global-deforestation/.
[37.] Government of the Republic of Congo. Article 72. , Pub. L. No. 33–2020, Forest Code (2020).
[38.] Fern. (2020). Vietnam timber legality Decree's silences are as worrisome as its shrinking scope. *Fern*. https://www.fern.org/publications-insight/vietnam-timber-legality-decrees-silences-are-as-worrisome-as-its-shrinking-scope-2250/.
[39.] Chatham House & Climate Focus. (2019). *Strengthening forest governance frameworks: Progress in nine major tropical forest countries*. https://forestdeclaration.org/resources/strengthening-forest-governance-frameworks-progress-in-nine-major-tropical-forest-countries/.
[40.] Weisse, M., & Goldman, E. (2022). Forest Pulse: The Latest on the World's Forests. https://research.wri.org/gfr/latest-analysis-deforestation-trends.
[41.] Daemeter & Tropical Forest Alliance. (2021). *Decade of Progress. Reducing Commodity Driven Deforestation in Indonesia and Malaysia*. https://www.tropicalforestalliance.org/assets/Uploads/TFA_Design_210921-1.pdf.
[42.] Dil, S., Ewell, C., Wherry, A., & Doyle, C. (2021). *Rolling Back Social and Environmental Safeguards*. https://www.forestpeoples.org/sites/default/files/documents/Rolling%20Back%20Social%20and%20Environmental%20Safeguards%20-%20Global%20Report%20ENGLISH%20FINAL.pdf.
[43.] Sembiring, R., Fatimah, I., & Widyaningsih, G. A. (2020). Indonesia's Omnibus Bill on Job Creation: a Setback for Environmental Law? *Chinese Journal of Environmental Law*, *4*(1), 97–109. https://doi.org/10.1163/24686042-12340051.
[44.] Madani. (2020). *Overview of the Risks of the Job Creation Bill on Natural Forests and the Achievement of Indonesia's Climate Commitments*. https://madaniberkelanjutan.id/2020/05/06/tinjauan-risiko-ruu-cipta-kerja-terhadap-hutan-alam-dan-pencapaian-komitmen-iklim-indonesia#.

[45] Castello Sant, L. (2020, November 11). The Indonesia Omnibus Law: Prioritising Economic Growth at the Expense of the Environment. October 18, 2022, https://earth.org/the-indonesia-omnibus-law/.

[46] Sembiring, R. et al. (2020).

[47] Sembiring, R. et al. (2020).

[48] Environmental Paper Network et al. (2021).

[49] Irfany Maqoma, R. (2021, September 17). Tak hanya diperpanjang, moratorium sawit juga harus diperkuat [The Conversation]. https://theconversation.com/tak-hanya-diperpanjang-moratorium-sawit-juga-harus-diperkuat-168169.

[50] Environmental Paper Network, Pusaka, GRAIN, WALHI, Greenpeace, Global Forest Coalition, et al. (2021). Swallowing Indonesia's forests: The new "Food Estates Programs" announced for Indonesia will result in more hunger and threaten people, regional forests and the global climate. https://environmentalpaper.org/wp-content/uploads/2021/03/2021-03-Swallowing-Indonesias-forests.pdf.

[51] Pendrill, F. et al. (2022).

[52] Hoang, N. T., & Kanemoto, K. (2021). Mapping the deforestation footprint of nations reveals growing threat to tropical forests. *Nature Ecology & Evolution*, *5*(6), 845–853. https://doi.org/10.1038/s41559-021-01417-z.

[53] Hoare, A., & Kanashiro Uehara, T. (2022a).

[54] Hoare, A., & Kanashiro Uehara, T. (2022a).

[55] Prestemon, J. P. (2015). The impacts of the Lacey Act Amendment of 2008 on U.S. hardwood lumber and hardwood plywood imports. *Forest Policy and Economics*, *50*, 31–44. https://doi.org/10.1016/j.forpol.2014.10.002.

[56] FLEGT IMM. (2021, December 3). FLEGT/EUTR Fitness Check – Mixed verdict on effectiveness [FlEGT Independent Market Monitor]. August 23, 2022, https://flegtimm.eu/news/flegt-eutr-fitness-check-mixed-verdict-on-effectiveness/.

[57] Norman, M. (2021). *How is the European Union Timber Regulation Impacting Industry Due Diligence and Sourcing Practices?* https://www.forest-trends.org/publications/how-is-the-european-union-timber-regulation-impacting-industry-due-diligence-and-sourcing-practices/; Hoare, A., & Kanashiro Uehara, T. (2022a).

[58] Hoare, A., & Kanashiro Uehara, T. (2022a).

[59] Hoare, A., & Kanashiro Uehara, T. (2022a).

[60] Forest Legality Initiative. (2022, April). Swiss Timber Trade Ordinance. https://forestlegality.org/policy-law/swiss-timber-trade-ordinance.

[61] Hoare, A. (2020a). Chatham House Forest Policy Assessment – Japan. https://forestgovernance.chathamhouse.org/media/data-download/Forest-Policy-Assessment-Japan.pdf.

[62] Richards, M., Basic Treanor, N., Sun, X., & Tenorio Fenton, S. (2022). *China's International Wood Trade: A Review, 2011-2020*. https://www.forest-trends.org/wp-content/uploads/2022/06/China-Trade-Report-2022.pdf.

[63] UK Government. *Environment Act 2021*., (2021). https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

[64] European Commission. *Proposal for a Regulation of the European Parliament and the Council on the making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010*. (2021).

[65] Schatz, B. *FOREST Act of 2021*., Pub. L. No. S.2950 (2021).

[66] Schatz, B.

[67] Hoare, A., & Kanashiro Uehara, T. (2022a).

[68] Forest and Agriculture Organization of the United Nations (FAO). (n.d.). *Legal and sustainable forest value chains for climate action* (p. 10). https://www.fao.org/3/cb9041en/cb9041en.pdf.

[69] Cerutti, P., Newbery, J., Goetghebuer, T., & Leszczynska, N. (2022, July 6). One commodity, seven countries – and multiple impacts for legal timber. https://forestsnews.cifor.org/78109/one-commodity-seven-countries-and-multiple-impacts-for-legal-timber?fnl=en.

[70] Cerutti, P. O., Goetghebuer, T., Leszczynska, N., Dermawan, A., Newbery, J., Tabi Eckebil, P. P., et al. (2021). Voluntary Partnership Agreements: Assessing impacts for better policy decisions. *Forest Policy and Economics*, *124*, 102386. https://doi.org/10.1016/j.forpol.2020.102386; Cerutti, P., Tsanga, R., Goetghebuer, T., Leszczynska, N., Newbery, J., Almeida, B., et al. (2022). *Collecting evidence of FLEGT-VPA impacts: Cameroon Country Report*. https://www.cifor.org/publications/pdf_files/reports/Cameroon-VPA-Report.pdf; Sarfo-Adu, G. K. (2021). Forest Regulatory Frameworks and Outcomes: An

Assessment of Flegt and Timber Exploitation Activities in Ghana. *Journal of Resources Development and Management*, *73*. https://www.iiste.org/Journals/index.php/JRDM/article/view/55684/57504.

[71.] Sarfo-Adu, G. K. (2021).; Cerutti, P. O. et al. (2021).

[72.] Cerutti, P. et al. (2022). Cerutti, P. O. et al. (2021).

[73.] Cerutti, P. O. et al. (2021).

[74.] Fern. (2021, February 10). The Republic of the Congo: Forest Code and Climate Plans are Boht a Cause for Hope. https://www.fern.org/publications-insight/republic-of-the-congo-forest-code-and-climate-plans-are-both-a-cause-for-hope-2296/.

[75.] Forest Trends. (2022). *Timber Legality Risk Dashboard: Vietnam*. https://www.forest-trends.org/idat_countries/vietnam.

[76.] Hoare, A., & Kanashiro Uehara, T. (2022b). *Forest sector revenues in Ghana, Liberia and the The Republic of the Congo*. https://doi.org/10.55317/9781784135188.

[77.] VPA Africa-Latin America Facility. (n.d.). Cameroon. https://flegtvpafacility.org/countries/cameroon/background/.

[78.] Center for International Forestry Research. (2020). *Desk Review- Cameroon*. https://www.cifor.org/publications/pdf_files/Reports/FLEGT-VPA_Cameroon.pdf.

[79.] Center for International Forestry Research. (2020).

[80.] Hoare, A., & Kanashiro Uehara, T. (2022a).

[81.] Dummett, C., & Blundell, A. (2021).

[82.] WWF. (2021b). Lift it up - How to make the EU Timber Regulation (EUTR) "fit for purpose." https://www.wwf.eu/?3193416/Lift-it-up---How-to-make-the-EU-Timber-Regulation-EUTR-fit-for-purpose.

[83.] Hoare, A., & Kanashiro Uehara, T. (2015). Tackling illegal logging and related trade: insights for promoting the responsible consumption and production of forest risk commodities. https://www.chathamhouse.org/sites/default/files/publications/research/20150715IllegalLoggingHoareFinal.pdf..

[84.] Hoare, A., & Kanashiro Uehara, T. (2022a).

[85.] Environmental Investigation Agency (EIA). (2020). *Cashing in on Chaos: How traffickers, corrupt officials, and shipping lines in The Gambia have profited from Senegal's conflict timber*. https://content.eia-global.org/assets/2020/06/EIA-Cashing-In-On-Chaos-HiRes.pdf.

[86.] World Wildlife Fund (WWF). (2021). *EU Forest Crime Initiative: EU Summary of the Gap Analysis* https://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/EU-Forest-Crime-Initiative-EU-GAP-Analysis.pdf.

[87.] World Wildlife Fund (WWF). (2021).

[88.] World Wildlife Fund (WWF). (2021).

[89.] World Wildlife Fund (WWF). (2021).

[90.] World Wildlife Fund (WWF). (2021).

[91.] Hoare, A. (2020b). *Chatham House Forest Policy Assessment - United States of America*. https://forestgovernance.chathamhouse.org/countries/united-states-of-america.

[92.] Environmental Investigation Agency (EIA). (2022, April 22). Convicted German timber trader investigated by EIA is raided for dealing in illegal Myanmar teak. September 7, 2022, https://eia-international.org/news/convicted-german-timber-trader-investigated-by-eia-is-raided-for-dealing-in-illegal-myanmar-teak/.

[93.] Environmental Investigation Authority. (2021). EIA victory in Netherlands' highest court confirms EU rules for Myanmar timber imports. September 18, 2022, https://eia-international.org/news/eia-victory-in-netherlands-highest-court-confirms-eu-rules-for-myanmar-timber-imports/.

[94.] World Wildlife Fund (WWF). (2019). *WWF Enforcement Review of the EU Timber Regulation (EUTR).* https://wwfint.awsassets.panda.org/downloads/wwf_eutr_implementation_eu_synthesis_report_2019.pdf.

[95.] Environmental Investigation Agency (EIA). (2021, September 1). Italian traders are defying the law and sanctions to keep importing teak from Myanmar. https://eia-international.org/news/italian-traders-are-defying-the-law-and-sanctions-to-keep-importing-teak-from-myanmar/.

[96.] Forest Trends. (2021).

[97.] Forest Trends. (2021).

[98.] Daemeter & Tropical Forest Alliance. (2021).

[99.] Environmental Investigation Agency (EIA) & Kaoem Telapak (KT). (2021). *Criminal Neglect – Failings in enforcement undermine efforts to stop illegal logging in Indonesia*. https://eia-international.org/report/criminal-neglect-failings-in-enforcement-undermine-efforts-to-stop-illegal-logging-in-indonesia/.

[100.] Sembiring, R. et al. (2020).

[101.] NYDF Assessment Partners. (2021).

[102.] Dummett, C., & Blubell, A. (2021). *Illicit Harvest, Complicit Goods: the state of illegal deforestation*

*for agriculture*. https://www.forest-trends.org/publications/illicit-harvest-complicit-goods/.

[103] Dummett, C., & Blubell, A. (2021).

[104] Williams, A., & Lemaitre, S. (2021, June). Uncovering corrupt schemes in the forest sector: The role of investigations. https://www.cmi.no/news/2800-uncovering-corrupt-schemes-in-the-forest-sector-the-role-of-investigations.

[105] Environmental Investigation Agency (EIA). (2020).

[106] Environmental Investigation Agency (EIA). (2021). *Rotten to the Core: How to tackle the corrupt networks facilitating wildlife and forest crime*. https://eia-international.org/report/rotten-to-the-core-how-to-tackle-the-corrupt-networks-facilitating-wildlife-and-forest-crime/.

[107] World Resources Institute & Climate Focus. (2022). *Sink or swim: How Indigenous and community lands can make or break nationally determined contributions*. https://forestdeclaration.org/resources/sink-or-swim//.

[108] Dummett, C., & Blubell, A. (2021); World Resources Institute & Climate Focus .(2022).

[109] Dummett, C., & Blubell, A. (2021).

[110] UN Climate Change Conference 2021. (2021b, November 2). Glasgow Leaders' Declaration on Forests and Land Use. July 18, 2022, https://ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use/.

[111] UN Climate Change Conference 2021. (2021a, November 2). COP26 IPLC Forest Tenure Joint Donor Statement. https://ukcop26.org/cop26-iplc-forest-tenure-joint-donor-statement/.

[112] *Amendments adopted by the European Parliament on 13 September 2022 on the proposal for a regulation of the European Parliament and of the Council on making available on the Union market as well as export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010.* (2022). https://www.europarl.europa.eu/doceo/document/TA-9-2022-0311_EN.html

[113] Rights and Resources Initiative. (2020). *Estimated area of land and territories of Indigenous Peoples, local communities and Afro-descendants where their rights are not recognized*. https://doi.org/10.53892/UZEZ6605.

[114] Rights and Resources Initiative. (2018). *At a Crossroads: Key Trends and Opportunities in Community-based Forest Tenure Reform*. https://rightsandresources.org/wp-content/uploads/2018/09/At-A-Crossroads-One-Pager_RRI_Feb-2019-Web-Version.pdf.

[115] Rights and Resources Initiative. (2020).

[116] ClientEarth. (2020). How the Republic of Congo's new forest law can help preserve world's 'second lung.' September 21, 2022, https://www.clientearth.org/latest/latest-updates/news/how-the-republic-of-congo-s-new-forest-law-can-help-preserve-world-s-second-lung/.

[117] European Network for Central Africa (EURAC). (2021, May 5). Press Release - Victory for civil society in the DRC: Adoption of the law on the protection of indigenous Pygmy peoples and launch of the PEUPLE project. https://www.eurac-network.org/en/press-releases/press-release-victory-civil-society-drc-adoption-law-protection-indigenous-pygmy.

[118] Actualidad Ambiental. (2020). *680 comunidades nativas esperan la titulación de sus territorios en Perú*. https://www.actualidadambiental.pe/680-comunidades-nativas-esperan-la-titulacion-de-sus-territorios-en-peru/.

[119] Food and Agriculture Organization (FAO). (n.d.). Indigenous Peoples: Free, Prior and Informed Consent. https://www.fao.org/indigenous-peoples/our-pillars/fpic/en/.

[120] *United Organisation for Batwa Development in Uganda (UOBU) and 11 Others vs Attorney General and 2 Others.* , (Constitutional Court of Uganda 2021).

[121] Namara, E. (2022, March 21). Court Ruling Brings Hope to a Displaced People. *Global Press Journal*. https://globalpressjournal.com/africa/uganda/court-ruling-brings-hope-displaced-people/.

[122] Dil, S. et al. (2021).

[123] Global Witness. (2022). *Decade of defiance*. https://www.globalwitness.org/en/campaigns/environmental-activists/decade-defiance/.

[124] Global Witness. (2022).

[125] Dil, S. et al. (2021).

[126] Macqueen, D. and Mayers, J. (2020). Unseen foresters - an assessment of approaches for wider recognition and spread of sustainable forest management by local communities. WWF, Stockholm, Sweden https://wwfint.awsassets.panda.org/downloads/ex_summary__spotlight_on_unseen_foresters_1.pdf.

[127] Sarfo-Adu, G. K. (2021). Cerutti, P. O. et al. (2021).
[128] Cerutti, P. et al. (2022). Cerutti, P. O. et al. (2021).
[129] Cerutti, P. O. et al. (2021)..
[130] Cerutti, P. O. et al. (2021). Cerutti, P. et al. (2022). Sarfo-Adu, G. K. (2021).
[131] *Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Article 12)*. (2018). https://repositorio.cepal.org/bitstream/handle/11362/43583/1/S1800428_en.pdf.
[132] International Institute for Sustainable Development (IISD). (2021, April 26). Escazu Agreement Takes Effect, Enshrining Right to Sustainable Development. https://sdg.iisd.org/news/escazu-agreement-takes-effect-enshrining-right-to-sustainable-development/.
[133] Fern. (2021, February 10).
[134] Hoare, A., & Kanashiro Uehara, T. (2022a).
[135] Vizcarra, N. (2021, May 1). Good governance in Ethiopia's communal forests. October 18, 2022, https://forestsnews.cifor.org/72287/good-governance-in-ethiopias-communal-forests?fnl=en.
[136] EU Reporter. (2021, October 5). "Hard-won victory" - European Parliament opens EU courts to environmental defenders [EU Reporter]. https://www.eureporter.co/environment/2021/10/05/hard-won-victory-european-parliament-opens-eu-courts-to-environmental-defenders/.
[137] ClientEarth. (2022, September 13). European Parliament ground-breaking vote on deforestation law a 'big victory' - ClientEarth lawyers [ClientEarth.org]. https://www.clientearth.org/latest/press-office/european-parliament-ground-breaking-vote-on-deforestation-law-a-big-victory-clientearth-lawyers/.
[138] Surma, K. (2022, May 4). Indian Court Rules That Nature Has Legal Status on Par With Humans—and That Humans Are Required to Protect It [Inside Climate News]. https://insideclimatenews.org/news/04052022/india-rights-of-nature/.
[139] Challe, T. (2021, April 22). The Rights of Nature — Can an Ecosystem Bear Legal Rights? [Columbia Climate School - Climate, Earth, and Society]. https://news.climate.columbia.edu/2021/04/22/rights-of-nature-lawsuits/#:~:text=What%20are%20the%20%E2%80%9CRights%20of,or%20even%20by%20climate%20change.
[140] Soares Bicalho, I., Mantelli, G., Antonia Tigre, M., & Añon Brasolin, C. (2022, March 28). Guest Commentary: Brazil Will Have First Climate Litigation Trials in the Supreme Court. https://blogs.law.columbia.edu/climatechange/2022/03/28/guest-post-brazil-will-have-first-climate-litigation-trials-in-the-supreme-court/; Carvalho, A. (2022, April 12). Brazil Court Reviews Bolsonaro's Environmental Policies. https://www.hrw.org/news/2022/04/12/brazil-court-reviews-bolsonaros-environmental-policies.
[141] PSB et al. v. Brazil (on deforestation and human rights). (2020). http://climatecasechart.com/non-us-case/brazilian-socialist-party-and-others-v-brazil/; Carvalho, A. (2022, April 12).
[142] Kaminski, I. (2022, July 7). Brazilian court world's first to recognise Paris Agreement as human rights treaty. https://www.climatechangenews.com/2022/07/07/brazilian-court-worlds-first-to-recognise-paris-agreement-as-human-rights-treaty/.
[143] ClientEarth Communications. (2021, June 1). UK citizens: it's time to fight for your rights. https://www.clientearth.org/latest/latest-updates/news/uk-citizens-it-s-time-to-fight-for-your-rights/.
[144] Sembiring, R. et al. (2020).

# Acknowledgments


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## CONTRIBUTORS

Thiago Chagas, Darragh Conway, Franziska Haupt, Alan Ichilevici de Oliveira, Erin D. Matson, Sanggeet Mithra Manirajah, and Tatenda Wangui

We would also like to thank the following people for their valuable insights and review:

Melaina Dyck, Cristina Eghenter, Alain Frechette, Mary Gagen, Anne Sophie Gindroz, Chloe Ginsburg, Alison Hoare, Lisa King, Hermine Kleymann, Beatriz Luraschi, Anna Rynearson, Michelle Sonkoue, Thiago H. Kanashiro Uehara, and Brittany Williams

## DESIGN AND FIGURES

Elisa Perpignan and Sara Cottle

## COPY EDITOR

Melaina Dyck and Emily Steadman

## CITATION

Please use the following citation when referencing the findings presented in this brief:

> Forest Declaration Assessment Partners. (2022). Forest governance: Theme 4 assessment. *Forest Declaration Assessment: Are we on track for 2030?* Climate Focus (coordinator and editor). Accessible at www.forestdeclaration.org.


Forest Declaration Assessment

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