PROGRESS ON THE NEW YORK DECLARATION ON FORESTS

Balancing forests and development

Addressing infrastructure and extractive industries, promoting sustainable livelihoods

Goals 3 & 4 Progress Report
November 2020
forestdeclaration.org

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New York Declaration on Forests
GLOBAL PLATFORM

Executive Summary

Over 200 governments, multinational companies, groups representing Indigenous communities, and non-governmental organizations have endorsed the New York Declaration on Forests (NYDF) since 2014, committing to doing their part to achieve its ambitious targets to end natural forest loss and to restore forests. Each year, the NYDF Progress Assessment—conducted by an independent civil society network of research organizations and think tanks called the NYDF Assessment Partners—monitors collective progress towards the NYDF goals.

2020 is a crucial year for review of and reflection on forest goals for the NYDF and the global community. Rather than halving since 2014—a 2020 target in NYDF Goal 1—the rate of natural forest loss has increased. Ending natural forest loss by 2030 will require a rapid paradigm shift by the global community towards valuing forests for their essential benefits and prioritizing their protection.

The 2020 NYDF Progress Assessment focuses on two complementary, crucial goals for achieving sustainable development:

- Goal 3. Significantly reduce deforestation derived from other economic sectors by 2020
- Goal 4. Support alternatives to deforestation driven by basic needs (such as subsistence farming and reliance on woodfuel for energy) in ways that alleviate poverty and promote sustainable and equitable development

Key findings

Rising risks to forests

The pace of large-scale infrastructure development and natural resource extraction is increasing across many tropical forest regions, posing a rising threat to intact forest landscapes. Demand for mined metals and minerals and fossil fuels is still growing, putting increased pressure on highly biodiverse forests that play host to significant levels of deposits of these valuable commodities.

The largely top-down development plans driving this growth in infrastructure and extractive industries often fail to provide commensurate investments in sustainable local economies. The overall area of shifting agriculture is decreasing, while the area of intensive agricultural production is increasing, a trend likely to lead to increased deforestation. Meanwhile, the number of artisanal and small-scale miners has tripled in the last two decades. Demand for other forest resources like fuelwood, charcoal, and non-timber forest products also shows little sign of slowing.

In order to assess progress toward mitigating these rising risks for forests, this report outlines four strategies **(Figure 2 of the report)** that would, if pursued, contribute to the achievement of Goals 3 and 4. These strategies serve as indicators for assessing the actions of governments, companies, grassroots movements, and the financial sector and international donors.

Figure 2. Strategies for progress in achieving NYDF Goals 3 and 4

Note: The four strategies to reduce forest impacts from infrastructure and extractive industries and to promote sustainable alternative livelihoods address different scales of thought, planning, and intervention. Strategies 3 and 4 apply to projects and interventions on the ground, which are nested within the high-level planning addressed by Strategy 2. In turn, the macroeconomic and strategic planning of Strategy 2 will be bounded by the conceptions of development that Strategy 1 seeks to expand. Adopting Strategy 1, by embracing alternative development pathways, will have cascading positive effects that will make Strategies 2, 3, and 4 easier to follow.

Progress by governments

Forest country governments have taken steps to align macroeconomic planning processes and national policies with forest goals. Almost 18 percent of global forests are designated as protected areas. Dozens of countries have made progress in developing national forest strategies, while many regional governments where mining and infrastructure are drivers of deforestation have adopted policies to address their impacts.

However, implementation of these programs and policies is progressing slowly, while some environmental protections are being rolled back. REDD+ readiness processes have resulted in positive policy changes in many countries, but few countries have yet received payment for results. Few governments have translated high-level forest policies related to mining and infrastructure into forest management plans or systematically assessed forest risks from these sectors. Many governments have also relaxed regulations for protected areas in recent years, accelerated now by the COVID-19 pandemic. It is unclear if and how trade-offs for forests are considered in these decisions.

Though weak design, implementation, or enforcement of regulations is common, most forest countries do regulate infrastructure and extractive industry investments to reduce forest loss. Most countries have adopted requirements for environmental and social impact assessments, mine closure and rehabilitation, and biodiversity offsetting. However, often one or more of these regulating policies are poorly designed and do not reflect best practice in avoiding forest impacts. Even where policies are adequate on paper, enforcement may be lax.

As part of REDD+ processes, many countries are planning support programs that aim to holistically alleviate poverty and provide for alternative and sustainable livelihoods while reducing overall deforestation. Outside of REDD+ programs, though, governments that promote smallholder productivity to remove pressure from forests often fail to pair those interventions with investments in securing smallholder and community rights, institutions, public services, and market access. Support is impaired by a lack of funding and capacity of relevant government institutions.

Progress by companies

Companies within the extractive sector are increasingly recognizing their forest impacts and corresponding responsibilities; however, corporate transparency related to forests remains limited. Most (78 percent) mining companies assessed for this report have made commitments to stop biodiversity loss. However, due to lack of transparent disclosure, it is difficult to gauge ambition and progress or to determine whether the measures taken are sufficient to address their impacts. Only 23 out of 225 total companies invited to disclose in 2019 and 2020 did so. Companies that do report are often performing poorly against CDP metrics and the Global Reporting Initiative's reporting standards.

Voluntary sustainability initiatives have emerged to guide the extractives industry and infrastructure developers. Mining certification standards tend to provide guidelines for mitigating biodiversity impacts, though common definitions for indirect and cumulative impacts are lacking, and uptake has been slow. Sustainability standards for the infrastructure sector have raised awareness of environmental and social pitfalls of poorly designed projects. However, as for extractives, uptake of these standards is minimal compared to the global scale of infrastructure development.

Company support for small-scale supply chain actors and affected local communities is not able to address underlying structural vulnerabilities. Cocoa and palm oil supply chain companies have initiated smallholder support and engagement programs that have led to increased productivity and in some cases have reduced deforestation. But efforts remain limited in scope, failing to reach smallholders at scale. In the mining sector, most companies whose mine sites overlap with small-scale mining operations engage with

these miners, but these relationships are generally motivated by reducing operational risk. Collective efforts that engage companies and governments in mutually beneficial collaboration offer a promising way forward to ensure holistic and complementary interventions.

Grassroots movements

Indigenous peoples, local communities, smallholders, and civil society actors have mobilized to gain access to and influence planning to protect forest lands from harmful development. Grassroots and Indigenous-led movements have tackled power inequities by building international alliances to put pressure on actors and to raise awareness on cross-country impacts of extractive projects and large-scale infrastructure. In some cases, through these mobilizations, they have successfully cancelled or delayed large-scale infrastructure projects. Grassroots movements have also helped embed the rights of nature into legal frameworks, but implementation of these rights through specific policy is limited. Indigenous communities have recently scored legal victories to defend their territorial rights, but redress for harms through the courts has often been slow.

Local communities have also made progress in demonstrating the viability of community-based natural resource management and other bottom-up approaches to development and forest protection. Where forest management is driven and led by communities themselves, it has resulted in increased community self-determination, autonomy, and a less extractive and more sustainable approach to improved livelihoods, along with reduced deforestation. Grassroots movements led by Indigenous communities are also fighting for direct access to climate finance, in recognition of Indigenous peoples' successful sustainable management of their territories.

Progress by financial institutions and international donors

Many financial institutions, multilateral development banks, and bilateral donors have adopted policies, signed on to principles, and developed safeguards meant to address social and environmental risks across all sectors; however, major shortcomings remain in the implementation of these protections. There is a general a lack of transparency in how and whether financial institutions and international donors avoid investments with high forest risks. Even institutions which have adopted safeguards often fail to publish information on their impact on forests. And though some financial actors have made progress with their sustainability commitments, there is still a major and largely opaque financial market without any policies to protect forests.

Funding flows toward interventions to alleviate poverty while reducing deforestation are miniscule compared to non-forest-aligned investments. REDD+ initiatives have mobilized at least USD 7.6 billion of international and domestic public finance, but many of these programs are still in early stages. On the private side, a number of impact investors and nascent platforms show potential to support job creation along with tropical forest protection, but there is limited information on the impacts of these investments so far.

Barriers to progress

A widespread lack of transparency continues to impair accountability of governments, companies, international donors, and other financial actors.

The number of commitments and policy goals to protect forests keeps increasing. Governments are adopting REDD+ strategies; companies are making commitments to address sustainability concerns in mining; financial institutions are signing up to sustainable lending principles. But action is what counts, and there remains little available information on the extent of implementation of commitments and the on-the-ground outcomes of these efforts.

This lack of transparency reflects a general opacity that prevails in the extractive and infrastructure sectors. Macro-economic planning happens largely behind closed doors, and megaprojects are planned and announced by governments and investors without meaningful insight and participation of civil society and grassroots stakeholders. Increasingly complex financial instruments backing infrastructure developments inhibit insights into how social and environmental safeguards are applied. The available evidence is insufficient to understand whether and how forest trade-offs are considered in this planning and decision making.

Accountability in the mining sector is relatively better than in infrastructure, likely because civil society has been more active in calling out human rights violations and the misalignment between corporate action and public-facing pledges. Consumer-facing companies are also increasingly aware of sustainability risks of mined materials, spurring more substantive engagement in sustainable supply-chain initiatives. Agricultural supply chain companies are far ahead of their mining and infrastructure peers in detailed commitments to reduce forest impacts of their operations. However, transparency in this sector is still quite limited, especially in supply chains that rely heavily on smallholder farmers.

Barriers to corporate transparency and accountability are manyfold and include the lack of independent verification of company-reported data on progress; as-yet limited transparency in complex supply chains; the wide variety and lack of common definitions and norms across mining, infrastructure, and agricultural sustainability standards; lack of impact measurement in reporting and disclosures; and the limited incorporation of local communities in monitoring efforts.

Governments often grapple with implementing existing forest policies due to a lack of political will, capacity, and stability. An imbalance in power among government agencies allows vested interests to shape enforcement regimes.

In many forest countries, policies and laws that aim to safeguard forests exist on paper. However, implementation of these policies is often weak, while underlying factors that affect forest loss, like tenure insecurity, are incompletely addressed. Environmental and forest agencies often lack capacity and funding compared to agriculture, mining, and energy ministries, rendering them ill-equipped to counter vested interests in the mining and infrastructure sectors. Instability in governments, whether due to political shifts or internal conflict, can further undermine the strength and efficacy of institutions charged with forest protection.

Political leaders often favor economic development approaches based on resource exploitation and agricultural expansion. At the same time, too many decision-makers give low priority to forests and to forest-dependent people. Measures to mitigate negative impacts on forests, and people dependent on them, are often lukewarm at best. Policies and institutions set up to protect lands and communities from environmental harms have been weakened in many forest countries, especially under cover of the COVID-19 crisis.

Successful poverty-reduction and smallholder support interventions that reduce deforestation are challenging to scale; public-private coordination to align complementary interventions is still in nascent stages.

While promising efforts have demonstrated that poverty and deforestation can be addressed comprehensively, these types of programs are difficult to scale. Support programs delivered by companies to smallholders within their supply chains often focus narrowly on farmers tied to the company through outgrower schemes. An underlying lack of trust often defines company-smallholder relationships, while supply chain complexities impede full knowledge of smallholders already reached—both of these issues limit the extent to which programs can scale.

At the same time, governments have limited capacity to promote the comprehensive reforms and interventions needed to ensure that land developments are sustainable, protecting forests and contributing to the livelihoods of the rural poor. Many

interventions are one-dimensional, failing to address the systemic nature of both poverty and deforestation.

As part of jurisdictional and cross-sectoral approaches, some companies and sectors have started collaborating directly with governments and civil society to address deforestation through collective and coordinated action. These collaborative models have the potential to address the problem comprehensively, though, for now, most are still in the early stages.

The power disparity between governments and companies, on the one hand, and Indigenous peoples, local communities, and other small-scale actors, on the other, restricts inclusive development pathways and can lead to the criminalization and murder of environmental defenders.

Local peoples tend to have little say in economic development approaches and the allocation and use of forest lands. Instead, powerful corporations and national elites influence decision-making to facilitate resource exploitation, while grassroots actors who express their preferences are often shunted aside or ignored. Weak recognition of customary land ownership and territorial sovereignty of Indigenous peoples further undermines community efforts to assert their right to self-determination. In practice, processes that are designed to re-balance power toward communities—like free, prior, and informed consent requirements—often get translated into bureaucratic exercises conducted superficially, thus denying communities a real chance to voice potential dissent.

Recent years have seen increased repression of civil society and escalating violence against environmental defenders, which further limits accountability of companies and governments. Extractive sectors account for a large portion of reported environmental conflicts and were associated with the highest number of murders of environmental defenders in 2019. States have also used criminalization of protest and detention of activists as tools of control and suppression of dissent to how natural resources are used and governed.

Especially in the Global North, economies continue to rely on commodities produced in developing and emerging economies, enabled by production practices linked with deforestation. Governments, companies, and consumers must take more responsibility for environmental and social externalities not reflected in market prices.

REDD+ emerged as a means for developed countries to compensate developing countries for successes in reducing emissions from deforestation and forest degradation through financial partnerships. While many forest countries have initiated reforms and policies to address the problem of deforestation, realization of REDD's potential has taken longer than hoped. Many countries are still in a preparation process after more than a decade, and others are still unable to sustainably implement and scale their activities. Though this delay can be explained in part by the complexity of the needed reforms and capacity-building, as well as a lack of sufficient finance flows for these programs, donor countries have also set a variety of conditions that can create barriers to successful partnerships between forest and donor nations.

An increasing number of demand-side initiatives to reduce and end imported deforestation are still in their early stages or are merely voluntary. Producers and consumer-facing companies in metal and mineral supply chains also have a significant way to go before their efforts will reflect their share of the responsibility for mining-driven deforestation.

Progress toward Goals 3 and 4—reducing deforestation from infrastructure and extractive developments, while supporting sustainable livelihoods—is slow. Without dramatic shifts in economic development strategies—away from a reliance on extraction, exploitation, and consumption, and toward alternative pathways which value forests and people—the world will not meet its ambitious goals for sustainable development, climate, and forests.

CHAPTER 1.

Introduction

The New York Declaration on Forests is a voluntary and non-binding international declaration calling for action to protect and restore global forests.

Over 200 governments, multinational companies, groups representing Indigenous communities, and non-governmental organizations have endorsed the New York Declaration on Forests (NYDF) and committed to doing their part to achieve its ambitious targets to end natural forest loss and to restore forests. The 10 goals of the declaration **(Box 1)** set milestones to maintain and increase forest cover (Goals 1 and 5), target specific drivers of forest loss (Goal 2, 3, and 4), call for elevating forests into the international climate and sustainable development agenda (Goals 6 and 7), and adequate finance (Goals 8 and 9) and forest governance (Goal 10) to enable the protection and enhancement of forests.

2020 is a crucial year for the review and reflection on forest goals for the NYDF and the global community.

The NYDF provides a unique forum for commitment and action, bringing different actors together and anchoring their ambitions in the international agenda. As a voluntary declaration, the NYDF relies on its endorsers and their partners to step forward, formulate plans, and take concrete actions, but does not hold them accountable for their progress.

Since its adoption in 2014, the NYDF has become a reference point for the status of global forests in general and tropical forests in particular. It is clear that important targets set by the declaration for this year have been missed. The outlook is also grim: forest loss has increased rather than halved since 2014, and success stories are a rare exception. Recent spikes in deforestation and devastating fires in Australia, Brazil, Indonesia, and the United States are alarming signs of a losing battle towards long-term sustainable use of land and forests. Ending natural forest loss, the goal the NYDF set for 2030, will require a fast and full paradigm shift by the global community towards valuing forests for their essential benefits and prioritizing their protection.

This report presents the 2020 NYDF Progress Assessment focusing on the declaration's goals to reduce deforestation from other economic sectors (Goal 3) such as infrastructure development and extractive industries, and support alternatives to deforestation driven by basic needs (Goal 4).

The assessment was conducted by the NYDF Assessment Partners, an independent civil society network of 28 research organizations and think tanks that monitors collective progress towards the NYDF goals. This coalition develops and revises goal-specific assessment frameworks and coordinates information gathering, analysis, and the presentation of findings.

Each year, the NYDF Progress Assessment monitors progress toward all goals in a collective and iterative process (see forestdeclaration.org) while focusing on a goal or set of goals for an in-depth progress assessment. The two goals that have not previously been assessed in detail are Goals 3 and 4, which cover a wide range of activities that can lead to deforestation and forest degradation, from large-scale infrastructure and extractive industries[a] **(Goal 3)** to small-scale encroachment of forests that is driven by poverty, including smallholder farming for subsistence and commercial agriculture,[b] artisanal and small-scale mining (ASM), woodfuel collection, and charcoal-making **(Goal 4)**.

a The most important non-agricultural economic sectors driving forest loss are infrastructure development and extractive industries. We do not consider human settlements within this report because it is not an economic sector.

b We consider only commercial smallholder farming that is linked to poverty, as incomes from commercial activities are essential for livelihoods, recognizing that, in practice, it is often difficult to distinguish information.

This report is divided into the following chapters:

- This introduction **(Chapter 1)**
- An overview of the impact and threat of these activities for forests **(Chapter 2)**
- A benchmark for measuring progress toward reducing deforestation from these sectors including an assessment framework **(Chapter 3)**
- The findings of the progress assessment for different actors, including governments of forest countries, private-sector companies, grassroots movements, and financing efforts **(Chapters 4 through 7)**
- A discussion of the barriers for progress including regional insights for the Congo Basin, Southeast Asia, and the Western Amazon **(Chapter 8)**, and
- A conclusion **(Chapter 9)**.

BOX 1. The ten goals of the NYDF

Goal 1
At least halve the rate of loss of natural forests globally by 2020 and strive to end natural forest loss by 2030.

Goal 2
Support and help meet the private-sector goal of eliminating deforestation from the production of agricultural commodities such as palm oil, soy, paper, and beef products by no later than 2020, recognizing that many companies have even more ambitious targets.

Goal 3
Significantly reduce deforestation derived from other economic sectors by 2020.

Goal 4
Support alternatives to deforestation driven by basic needs (such as subsistence farming and reliance on woodfuel for energy) in ways that alleviate poverty and promote sustainable and equitable development.

Goal 5
Restore 150 million hectares of degraded landscapes and forest-lands by 2020 and significantly increase the rate of global restoration thereafter, which would restore at least an additional 200 million hectares by 2030.

Goal 6
Include ambitious, quantitative forest conservation and restoration targets for 2030 in the post-2015 global development framework, as part of new international sustainable development goals.

Goal 7
Agree in 2015 to reduce emissions from deforestation and forest degradation as part of a post-2020 global climate agreement, in accordance with internationally agreed rules and consistent with the goal of not exceeding 2 degrees Celsius warming.

Goal 8
Provide support for the development and implementation of strategies to reduce forest emissions.

Goal 9
Reward countries and jurisdictions that, by taking action, reduce forest emissions – particularly through public policies to scale-up payments for verified emission reductions and private-sector sourcing of commodities.

Goal 10
Strengthen forest governance, transparency, and the rule of law, while also empowering communities and recognizing the rights of indigenous peoples, especially those pertaining to their lands and resources.

CHAPTER 2.

The forest impacts of infrastructure, extractive industries, and basic-needs activities

Infrastructure development often serves as a centerpiece of national and regional development plans. The form and content of these plans—what type of infrastructure is built where, and what types of activities and resources are prioritized—have long-term implications for local communities and for forests. On one hand, infrastructure can be envisioned as part of a package of interventions to promote sustainable development—a paved road providing access for a remote village to a nearby city, paired with a regular bus route and construction of a hospital. On the other hand, infrastructure plans may be designed to promote investments in large-scale natural resource extraction and the expansion of agro-industry into remote areas, such as cross-country highways connecting mine sites and agricultural areas to far-distant ports.

It is the latter, large-scale approach to infrastructure development and extractive industry promotion that is most threatening to forests, fragile landscapes, and local communities. Top-down development plans often fail to fully account for ecosystem impacts or provide commensurate investments in sustainable local economies. In the absence of economic opportunities and supportive policies, local actors may drive forest loss as they seek to provide for their basic needs or pull their families out of poverty.

The relationship between poverty and deforestation is not straightforward. Although deforestation is often attributed to poverty and a lack of livelihood opportunities,[1] evidence supporting this assumption is mixed.[2,3] Importantly, many studies indicate that rural households with higher incomes are often responsible for much more deforestation that poorer households because they have the means for more intensive exploitation of forests.[4–6] The complexity of the link between deforestation and poverty indicates that additional factors, such as governance and enforcement of regulations to protect forests, play an important role in addressing both problems simultaneously.

In this chapter, we discuss the extent to which infrastructure, extractive industries, and subsistence and small-scale activities linked to poverty drive deforestation and forest degradation. We are constrained in our reporting by the limited availability of systematic and global data on forest loss attributed to the Goal 3 drivers (mining, oil and gas extraction, and infrastructure development) and Goal 4 activities (small-scale agriculture, use of forest resources, and artisanal and small-scale mining). We present global and regional estimates of loss over roughly the last two decades, and, where available, projections of future forest risk from planned projects. In addition, we discuss the ways that these drivers of forest loss—especially infrastructure—interact with and enable other deforestation drivers, magnifying their overall impacts.

2.1 Infrastructure and extractive industries

From construction to utilization to decommissioning, infrastructure can lead to significant and lasting forest degradation and deforestation. The pace of large-scale infrastructure development is increasing across many tropical forests rich in biodiversity.

Estimates have pegged infrastructure as directly responsible for between nine and 17 percent of deforestation in tropical and subtropical forest countries.[7] Infrastructure provides services and facilitates transportation through physical networks such as roads, railways, and pipelines. The process of constructing these physical networks through forest areas requires clearing trees, and the pace of construction has been high over the last two decades. For example, in Papua, Indonesia's easternmost province, the public roads network increased by 44 percent from 2001 to 2018, with over 12,000 additional kilometers of roads constructed, including the Trans-Papua Highway. Over 86,000 hectares have been cleared within one kilometer of these roads since 2000, representing 12 percent of total deforestation in the region over the same time period.[8] In the Congo Basin, similar dynamics were observed over the past decades—the road network is estimated to have increased by 40 percent since 2003.[9]

Within the next three decades, it is estimated that another 25 million kilometers of roads could be built, with 90 percent located in developing countries—including ecologically sensitive regions.[10] The G-20 predict that, at current rates, investment in new infrastructure will amount to USD 78.8 trillion by 2040.[11] Large as this number appears, the G-20 argue that this leaves an "infrastructure gap" of almost USD 15 trillion over the same period, inhibiting economic growth potential.

The establishment of infrastructure has had both the intended, and sometimes unintended, effect of increasing other forms of resource extraction. Human encroachment into new forest areas further exacerbates forest disturbance.[12] For example, in Madre de Dios, Peru, the construction and opening of the Southern Interoceanic Highway correlated strongly with an uptick of artisanal and small-scale mining activity, even as the price of gold dropped after the highway was completed.[13] Pioneer infrastructure also facilitates illicit activities that can have significantly higher impacts—for every kilometer of legal road in Brazil, there are estimated to be three kilometers of illegal roads.[14]

The gravest risk to forests comes from transboundary megaprojects that are currently planned or under development in all major world regions of tropical humid forest.

Megaprojects are massive and complex development projects that may combine multiple types of transportation and energy infrastructure, along with sites of natural resource extraction and planned urbanization.[15] The Belt and Road Initiative, a massive infrastructure-based development strategy promoted by the Chinese government **(Box 16 in Section 7.1)** represents a paradigm of a megaproject. With an estimated 126 countries signed on, the expansive initiative calls for interlinked projects that will cut across forests and other fragile and biodiverse landscapes around the world.

Megaprojects are often framed as "economic corridors" when they span across landscapes, fostering regional transportation connections, resource extraction, and access. Such corridors are planned or under development in many critical forest regions **(Figure 1)**.[16] Across South America, governments have collaborated since 2000 to promote a series of strategic development corridors with dozens of high priority projects that have and will continue to directly impact swaths of the Amazon.[17] In Sub-Saharan Africa, regional

integration is fueling an infrastructure boom organized around dozens of development corridors to extract, transport, and export minerals and energy.[18] These corridors would cut across 400 existing protected areas and could degrade an additional 1,800 by stimulating the destruction of habitats near or inside reserves.[18] Across Indonesian Borneo[19] and Papua,[20] planned corridors would cut through intact forests and threaten at-risk species while providing questionable benefits to local communities.

Along with corridors based around highway and railroad construction, there are hydropower plans in the Amazon, Congo, and Mekong river basins that could have serious impacts on watersheds and river connectivity while increasing deforestation.[21] One study on a series of planned dams along the Amazon's Tapajós River basin found that they would contribute to an additional 950,000 hectares of forest loss in the Amazon by 2032, mostly due to associated roads that would promote migration and illegal invasions.[22] Planned dams in the Mekong river basin would substantially alter the region's hydrology and would encourage further expansion of road networks and irrigated cropland, at the expense of forests.[23] Though hydroelectric dams are important elements of energy security and climate strategies, even small-scale dams can seriously impact river basin ecosystems if they are poorly planned and when the cumulative effects of multiple dams are not taken into account.[24,25]

Significant extractive activities are found across regions hosting humid tropical forests, often concentrated in areas of high biodiversity.

Mining is the fourth-largest deforestation driver, contributing about seven percent of global forest loss.[7] Oil and natural gas extraction sites tend to overlap with areas rich in biodiversity, including Central Africa and large swaths of the western Amazon.[26–28] An estimated 11.9 million hectares of forest globally overlap with coal mining concessions.[29] The direct forest impacts of these extractive activities begin at the exploration phase and continue through the operation and decommissioning of extraction sites. Exploration activities can lead to forest fragmentation,[30,31] while trees are also cleared for operations (the "footprint" of the extraction site) and for associated infrastructure,[32] as well as unintended forest destruction due to structural failures, such as the collapse of tailings dams.[c]

The access roads, pipelines, and powerlines associated with extractive activities have driven 12 percent of intact forest landscapes' loss of area between 2000 and 2013.[31] When indirect effects of mining are accounted for—secondary infrastructure, or nearby urban expansion to supply a labor force, for example—then an estimated nine percent of deforestation in the Brazilian Amazon has been caused by mining.[33] Similar dynamics have been found in forest regions from the Congo Basin[34] to Ghana[35] to Indonesia.[36]

In Brazil, mining-induced deforestation has been detected up to 70 kilometers away from mining sites.[37] Based on several studies, a zone of influence of 50 kilometers around mining operations seems to be generally accepted.[37,38] According to a comprehensive World Bank review of non-coal mine sites, 1,539 operational large-scale mines (44 percent of all active mines) and a further 1,826 non-operational mines (under development or decommissioned) are located in forests.[39] This puts 10 percent of all forests at risk of impact from operational mine sites, and a full third at risk when mines in development or not currently operational are included.[39] Active coal mining is estimated to affect 1.74 million hectares of forest in Indonesia alone, and future permits could affect up to nine percent of the country's remaining forests.[40] Existing mining concessions also overlap with a significant share of the world's remaining intact forest landscapes [d] and areas of high biodiversity **(Table 1)**.[41,42]

c Tailings are the remaining waste materials after minerals have been extracted from mined ore. They are often stored as a slurry in a storage dam nearby the mine site. See Mudd, G. M. (2008). Sustainability Reporting and Water Resources: A Preliminary Assessment of Embodied Water and Sustainable Mining. Mine Water and the Environment, 27(3), 136.

d Intact forest landscapes are defined as "a seamless mosaic of forest and naturally treeless ecosystems with no remotely detected signs of human activity and a minimum area of 500 km."[31]

Mining concessions or illegal mining overlap with more than 21 percent of Indigenous lands in the Amazon.[43]

TABLE 1. Mining in forest areas by region, for selected regions[39]

Note: these figures exclude coal mining.

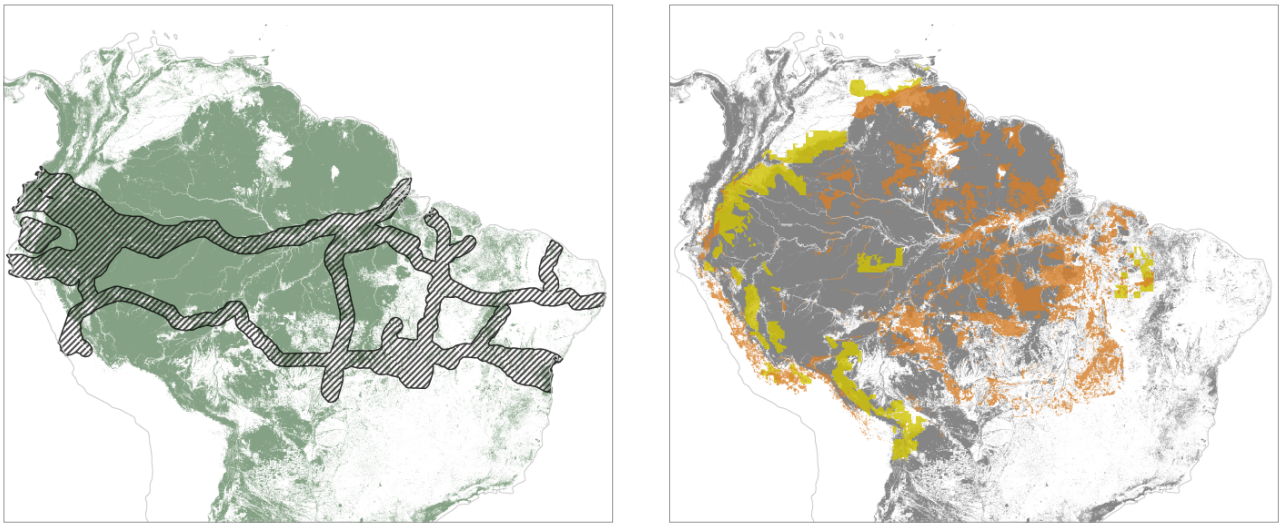
Region	Share of global forests found in region (%)	Share of mining in region that is in forests (%)
East Asia and Pacific	24	48
Latin America and Caribbean	18	37
Sub-Saharan Africa	12	39

Demand for mined and extracted products is increasing as the world becomes more industrialized, presenting enormous risks for forests.

There is no indication for a slowdown in consumption of mineral and metal-intensive technology product.[44] On the contrary, demand for critical metals like copper, lithium, and cobalt is expected to increase to support the production of renewable energy technologies necessary for a low-carbon societal transition.[45] Though global fossil fuel demand dipped slightly due to the COVID-19 pandemic, it is expected to at least rebound to previous levels.[46] Moreover, the geography of these high value fuel and mineral deposits, together with policies favorable to their expansion, hold significant risks for the world's remaining biodiverse old-growth forests and intact forest landscapes.[47,48] In the Amazon, 10.6 percent of intact forest landscapes overlap with mining operations, while this figure stands at 16.5 percent in the Congo Basin, 4.5 percent in the Mekong region, and 14.0 percent in the Coral Triangle in the western Pacific Ocean.[49]

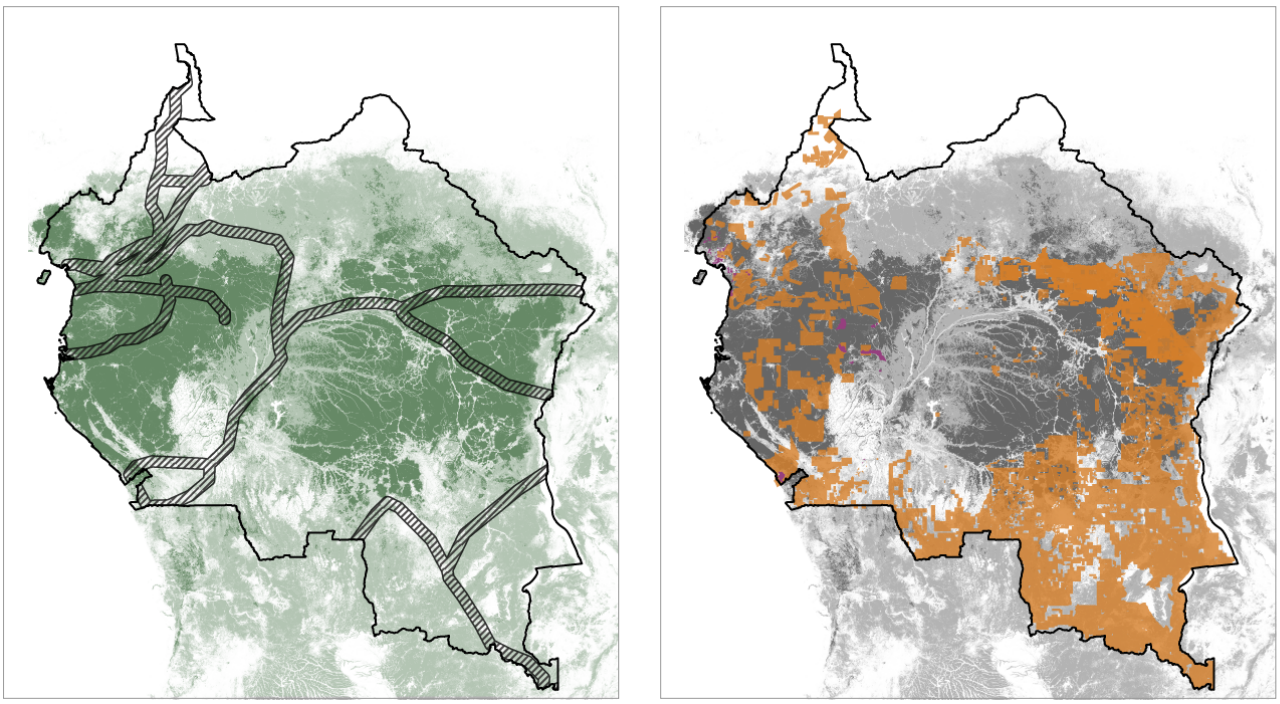
In addition, human encroachment into previously intact forest areas is a major contributor to zoonotic disease emergence.[50] As forests are fragmented due to land use conversion and infrastructure development, habitats are shrinking and more forest "edges" are being generated. These edges become key sites of human-wildlife interaction as communities provision themselves and service local markets for bushmeat and other forest products.[51]

Figure 1. Maps of planned economic corridors and concession areas overlaying forest in three tropical forest regions



1a. Amazon

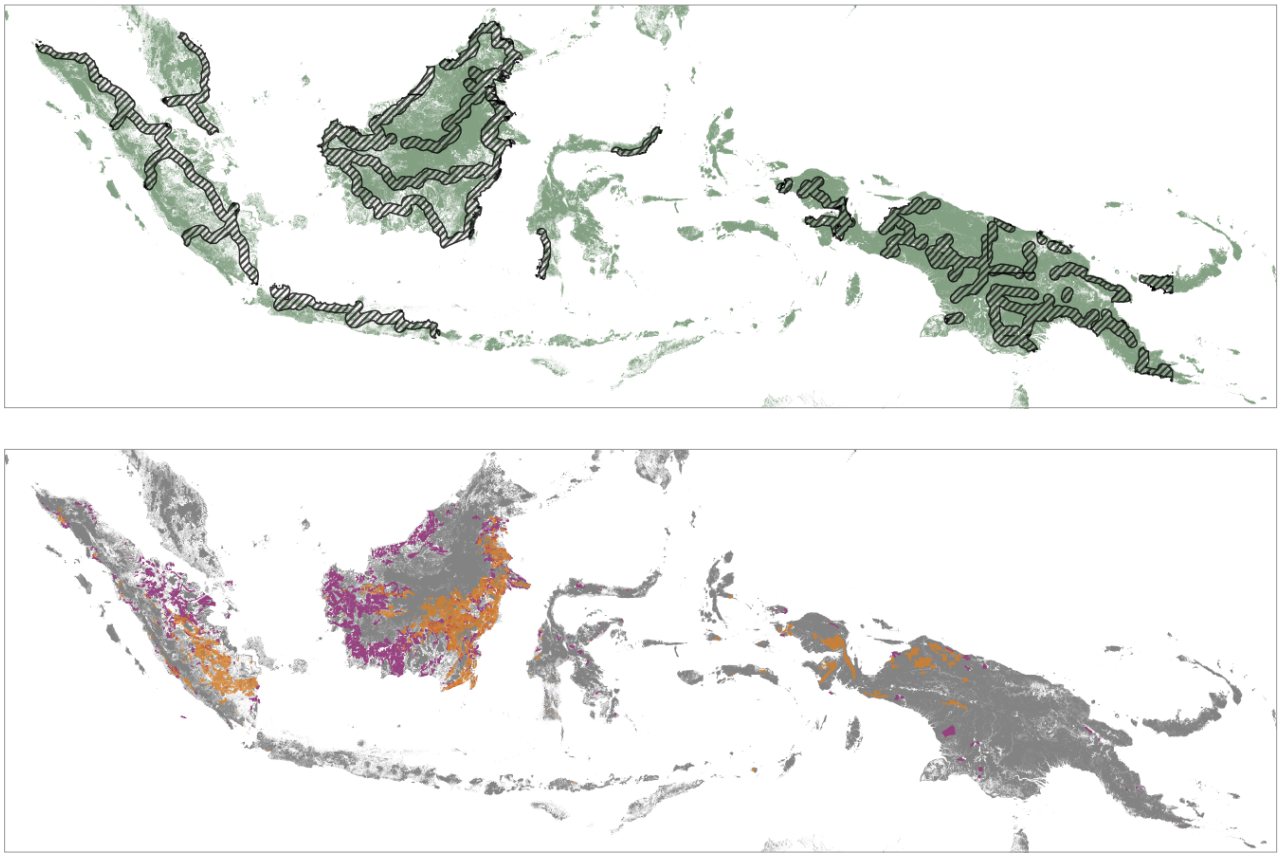
Corridors (IIRSA/COSIPLAN)
Forest
Oil Blocks
Mining



1b. Congo Basin

Corridors (planned corridors with 25-kilometer buffer)
Study Area
Forest (Evergreen)
Forest (Deciduous)
Oil Palm
Mining

Figure 1, continued



1c. Southeast Asia

Corridors (planned corridors with 25-kilometer buffer)

Forest

Oil Palm

Mining (Coal)

Note: The maps represent the spatial relations among planned infrastructure; mining, hydrocarbon, and oil palm concessions (where data is available); and forest extent as of 2020 in three regions: the Amazon, the Congo Basin, and Southeast Asia.

Sources: *For all three regions:* Forest extent in 2020 from Global Forest Change data (v1.7) via Google Earth Explorer.

For the Amazon: Planned economic corridors based on primary data from the Initiative for the Integration of the Regional Infrastructure of South America (IIRSA) South American Infrastructure and Planning Council (COSIPLAN). Concession data from the Amazon Geo-Referenced Socio-Environmental Information Network (RAISG).

For the Congo Basin: Forest extent was overlaid with the European Space Agency Climate Change Initiative (ESA CCI) Land Cover Product (2017) to differentiate between deciduous and evergreen forest. Study area outlines administrative borders of Cameroon, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Gabon, and Republic of the Congo via the Database of Global Administrative Areas (GADM). Planned economic corridors were drawn from Laurance, Sloan, Weng, & Sayer et al. (2015) and digitized as lines; then a 25-kilometer buffer was applied. Concession data from Global Forest Watch.

For Southeast Asia: Planned economic corridors were drawn from a literature review of planned regional development (e.g. Figure 2.1 in Duffield, Duffield, & Wilson (2019) and Alamgir et al. (2019)) and digitized as lines; then a 25-kilometer buffer was applied. Oil Palm concession data from Global Forest Watch, and Coal Mining concession data from Bebbington et al. (2018).

2.2 Basic-needs activities

The drivers of deforestation and forest degradation considered under Goal 4 are those activities that provide for a household's direct subsistence, as well as small-scale commercial activities that provide a livelihood.

Access roads and extraction sites, as described in the previous section, promote migration to new forest frontiers. This gives small-scale actors the opportunity to engage in practices that may drive deforestation, including land speculation and agricultural expansion. In general, activities associated with poverty and rural subsistence, as well as small-scale commercial production, can become harmful to forests under certain socio-economic conditions.[52] These activities include small-scale agriculture (subsistence and market farming), artisanal and small-scale mining (ASM), and the use of forest resources through wood harvesting (including for fuelwood, charcoal, and selective logging), and the collection of non-timber forest products (NTFPs).

Small-scale farming, especially for commodity production, is expanding across regions as demographic shifts and a trend toward commercial production apply pressure to livelihoods and forests.

While large-scale commercial agriculture is the largest driver of deforestation globally,[53] small-scale agriculture can have a large impact in certain forest regions. Farming practices of small-scale agriculture may be permanent, where crops are grown or livestock are grazed continuously on the same parcel of land; or shifting, where farmers rotate their plots and pastures periodically, clearing trees as they go and allowing trees to regrow on old plots.

To give a sense of the scale, subsistence agriculture—both permanent and shifting—has been estimated to be responsible for a third of deforestation in the tropics,[7] while shifting agriculture alone accounts for almost a quarter of annual tree cover loss (though much of this loss is likely not permanent deforestation).[e,f,53] Almost two thirds of the humid and sub-humid tropics show signs of shifting cultivation.[54] Recent data in the Congo Basin suggests that the area under shifting cultivation is expanding, correlating with population growth, and increasingly encroaching into pristine forests. Between 2000 and 2014, small-scale agriculture and, to some extent, clearing for charcoal production, drove 84 percent of all canopy forest loss in the region.[55]

Despite the upward trend in some regions, the total area of land under shifting cultivation is expected to decline in coming decades. However, this farming practice is often replaced with more intensive agricultural production which leads to permanent deforestation.[54] In Sub-Saharan Africa, small-scale agriculture is the dominant driver of forest loss and degradation, in part due to expansion of cultivation of cocoa, palm oil, or other cash crops.[53] Meanwhile, in Indonesia, the government has motivated millions of farmers to abandon swidden practices through transmigratory programs that promote palm oil cultivation.[56] Smallholders' share of the area under palm oil cultivation is projected to grow from 46 percent to more than 60 percent by 2030, largely through expansion, as demand in emerging markets like India and China continues to grow.[57,58]

e Tree cover loss is defined as the removal or mortality of trees within a defined area, which may be temporary or permanent. Deforestation is defined as the permanent conversion of land from forest to another land use. See the Goal 1 assessment for a more detailed explanation of tree cover loss versus deforestation.

f The effects of charcoal-making cannot be distinguished from slash-and-burn agriculture, but the contribution is estimated to be less than 10 percent of the total area affected by this driver.

In Brazil, smallholder farmers (cultivating less than 100 hectares) were responsible for almost 14 percent of total deforestation in the Amazon between 2004 and 2011, with their share of deforestation rising over this period.[59] Many of these farmers play an important role in the early stages of the beef supply chain—breeding cows and raising calves. Their operations can have an outsized impact on forests because they operate in remote areas at the forest frontier.[60]

The number of artisanal and small-scale miners has tripled in the last two decades, even as hundreds of thousands of hectares of forest have been felled and polluted.

ASM is a widespread activity to supplement insufficient income from agriculture or to earn cash in economically precarious situations.[61] The estimated number of people who directly engage in ASM has more than tripled since 1999, from 13 million to over 40 million today. Including miners' households, around 150 million people in total rely on the income provided by ASM.[61] ASM contributes to a large share of high-value minerals and metals, such as gold, tantalum, and tin, and a large share of certain countries' overall mineral production. For example, up to 90 percent of the Democratic Republic of Congo's minerals are mined by small-scale actors.[62]

There is a wide range in the extent of deforestation found around ASM sites. In one global study, shares of forest loss within a five-kilometer buffer area around ASM sites ranged from 0.1 to 46.2 percent.[62] ASM has been highly destructive in certain forest regions where deposits of high-value minerals, like gold, intersect with challenges of governance, and when higher levels of mechanization are employed.[62]

In the Peruvian Amazon, artisanal gold mining has resulted in 100,000 hectares of deforestation between 1984 and 2017,[63] along with mercury contamination of rivers in the deforested areas.[64] A third of the Venezuelan Amazon's deforestation from 2011 to 2015 occurred in the Orinoco Mining Arc. Here the government has established a special economic zone that legitimizes, and has spurred on, additional small-scale gold mining with little environmental oversight—to devastating effect on local ecosystems.[65] In Ghana, "galamsey" (illegal gold mining) has served as both an economic engine, contributing to a quadrupling of the country's gross domestic product over the last 30 years, and a dominant driver of forest loss.[66,67]

At least as significant as deforestation are the forest degradation effects of ASM, from the release of mercury and other pollutants to the use of earthmoving equipment in mechanized operations.[62,62] Soil depletion and pollution in these sites can impede forest regeneration for years even after sites are abandoned.[70] Access pathways opened by ASM miners are also often used by others who broaden these routes and drive significant knock-on forest loss and degradation.[69,71,72]

Demand for fuelwood, charcoal, non-timber forest products, and forest grazing represents an important driver of forest degradation which accelerates biodiversity loss and the risk of pandemic diseases.

Both fuelwood collection and charcoal production are primarily drivers of forest degradation rather than permanent deforestation.[73] An estimated one third of global woodfuel harvest is unsustainable.[74,75] Globally, about 41 million people work in fuelwood collection and charcoal production to supply cities.[75,76] For example, many African cities rely on charcoal, with nearly 80 percent of urban households using it as the main source of energy for cooking.[77]

The degree of forest clearing for charcoal production varies considerably among countries and even sites within each country.[78] For example, the share of total tree clearance attributed to charcoal production is less than one percent in Zimbabwe while more than 33 percent in Tanzania.[78] Recent efforts to quantify the forest degradation impacts of charcoal production near an urban center in southern Mozambique using historical Landsat imagery found that, from 2008 to 2018, over 68 percent of available forest area had been disturbed.[79] As the world population urbanizes—urban populations in Africa are

expected to double from 2000 levels by the year 2050[80]—charcoal production is increasing near cities to meet this rising demand.[77]

The use of NTFPs—forest products other than wood or timber, such as medicinal plants, bush meat, nuts, and fruits—can be an essential provisioning activity for forest-dependent communities; it may also be pursued as a commercial livelihood option. However, excessive harvesting of NTFPs can have cascading effects on ecosystem functioning and, in some cases, lead to overall forest decline.[81,82] For example, Indonesia and Malaysia have seen a decline in rattan harvests due to illegal harvesting and deforestation, while NTFP harvests have been on a steady decline in the Lao Peoples' Democratic Republic.[83–85]

The grazing of livestock in forests also contributes significantly to forest degradation, particularly in dryland forests. Forest grazing is estimated to drive 10 to 17 percent of degradation in countries where forests are already scarce or where it cumulates with other drivers of degradation.[7] In Ethiopia, for example, livestock are commonly grazed in national parks for income diversification and as a strategy to cope with drought.[86] However, overgrazing has degraded these forest habitats by impeding forest regeneration, threatening biodiversity.[87,88]

CHAPTER 3.

Assessing progress toward Goals 3 and 4

Infrastructure development and natural resource extraction have been foundational to the economic growth of countries in the Global North and newer economic powerhouses like China. Today, the same mega-projects that threaten the world's remaining intact tropical forests are built in part to service consumer demand from these same countries, or to follow their model for development.

There is no question that certain infrastructure is essential to reduce poverty, provide economic opportunity, and supply access to basic services such as markets, schools and hospitals, energy and water, and information networks. These are essential building blocks of development. And extractive industries provide the fuels, metals, and minerals that underpin our global economy, while certain mined materials will increasingly be required to transition to a low-carbon economy, in particular, for renewable energy technologies.[89] Yet, development projects come with environmental and social costs that tend to be distributed unequally, and which must be considered in their planning.

This chapter defines activities that indicate progress toward achieving NYDF Goals 3 and 4. In lieu of a quantified global baseline for forest impacts from infrastructure, extractive industries, and deforestation related to basic needs, we propose a blueprint of four strategies for governments, companies, and financial actors to minimize the forest impact of infrastructure and mining, and promote sustainable rural development while protecting forests. Based on these four strategies, we provide an assessment framework to measure progress toward each goal.

3.1 A quartet of strategies that indicate progress

To date, there has been no consensus on how to define progress against these two Goals. We therefore propose four strategies below that would, if pursued, contribute to their achievement. We use these strategies to define indicators for assessing the actions of governments, companies, grassroots movements, and the financial sector and international donors to determine the degree to which progress is being made against the Goals.

The following four strategies indicate how to balance development and forest conservation:

Figure 2. Strategies for progress in achieving NYDF Goals 3 and 4

Note: The four strategies to reduce forest impacts from infrastructure and extractive industries and to promote sustainable alternative livelihoods address different scales of thought, planning, and intervention. Strategies 3 and 4 apply to projects and interventions on the ground, which are nested within the high-level planning addressed by Strategy 2. In turn, the macroeconomic and strategic planning of Strategy 2 will be bounded by the conceptions of development that Strategy 1 seeks to expand. Adopting Strategy 1, by embracing alternative development pathways, will have cascading positive effects that will make Strategies 2, 3, and 4 easier to follow.

STRATEGY 1:
Embrace alternative development pathways that reduce over-exploitation, inefficient production, and excessive consumption of resources.

Decision-makers should consider alternative development pathways that are less dependent on excessive resource exploitation and consumption for the benefit of small segments of the population. There is potential for societies to undergo systemic change through a realignment of policy and investment priorities away from economic growth based on extraction and consumption.[90]

With the Paris Agreement, the Sustainable Development Goals (SDGs), and the NYDF, many governments and organizations have adopted ambitious goals to protect forests. Companies around the world echo these ambitious commitments in their own strategies, policies and guiding principles. Yet, there is a fundamental contention between these high-level goals and the existing paradigm of growing consumption and economies based on the exploitation of natural resources.

While improved implementation of existing policies—following the law—will contribute to some progress, radical changes will be needed to avoid the destruction of this planet and achieve well-being for all, in line with these high-level goals. In many regions of the world, however, the story of forest loss has been predicated on a long-held narrative of economic development that regards forests as resources to conquer, control, and exploit. Decision-makers in consumer countries fail to fully evaluate the environmental costs, especially those that incur in producer countries.

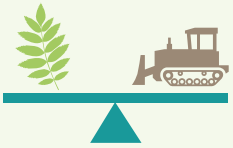
STRATEGY 2:
Align macroeconomic and strategic planning with forest goals

At the heart of any strategy to advance progress toward Goals 3 and 4 is the alignment of decision-making processes, policies and, importantly, their implementation with the SDGs, including forest goals. While this alignment will not completely avoid trade-offs, it will enable an open and transparent balancing of different competing goals and help to avoid the primacy of short-term, often private, benefits, over long-term public benefits and sustainability.

It is essential to consider the forest impact of development programs and projects by conducting forest risk and strategic impact assessments that allow the evaluation of impacts on forests and vulnerable populations. This helps governments decide if and where negative tradeoffs for forests are justified by other sustainable development benefits, and how plans can be adjusted to minimize harm. In addition, grassroots movements and civil society play an important role in influencing these processes at different scales. Their expertise should be actively engaged, using participatory approaches to enable those living in or dependent on forests to have a voice in decision-making.

In some cases, synergies may exist. For example, investments can be directed to areas where a lack of infrastructure leads to deforestation to satisfy basic needs; road investments may enable children to attend schools, increasing economic opportunity and well-being. Investments that would risk spurring migration to forest areas can be paired with socioeconomic development programs that provide alternative and more sustainable livelihood options (e.g. sustainable intensification of agriculture) alongside strong protections for forests.

This strategy applies to governments as well as private corporations. Macroeconomic planning is primarily the responsibility of governments, who direct the flows of public funds and, to varying degrees, determine land use options and provide direction or incentives to private industry to pursue certain economic opportunities. Large and multinational private-sector actors influence government decision-making, but also apply similar processes to plan investments and assess risks. For megaprojects, which often go beyond the scale of individual countries, regional and international organizations, such as multilateral development banks and intergovernmental platforms, play an especially important role.



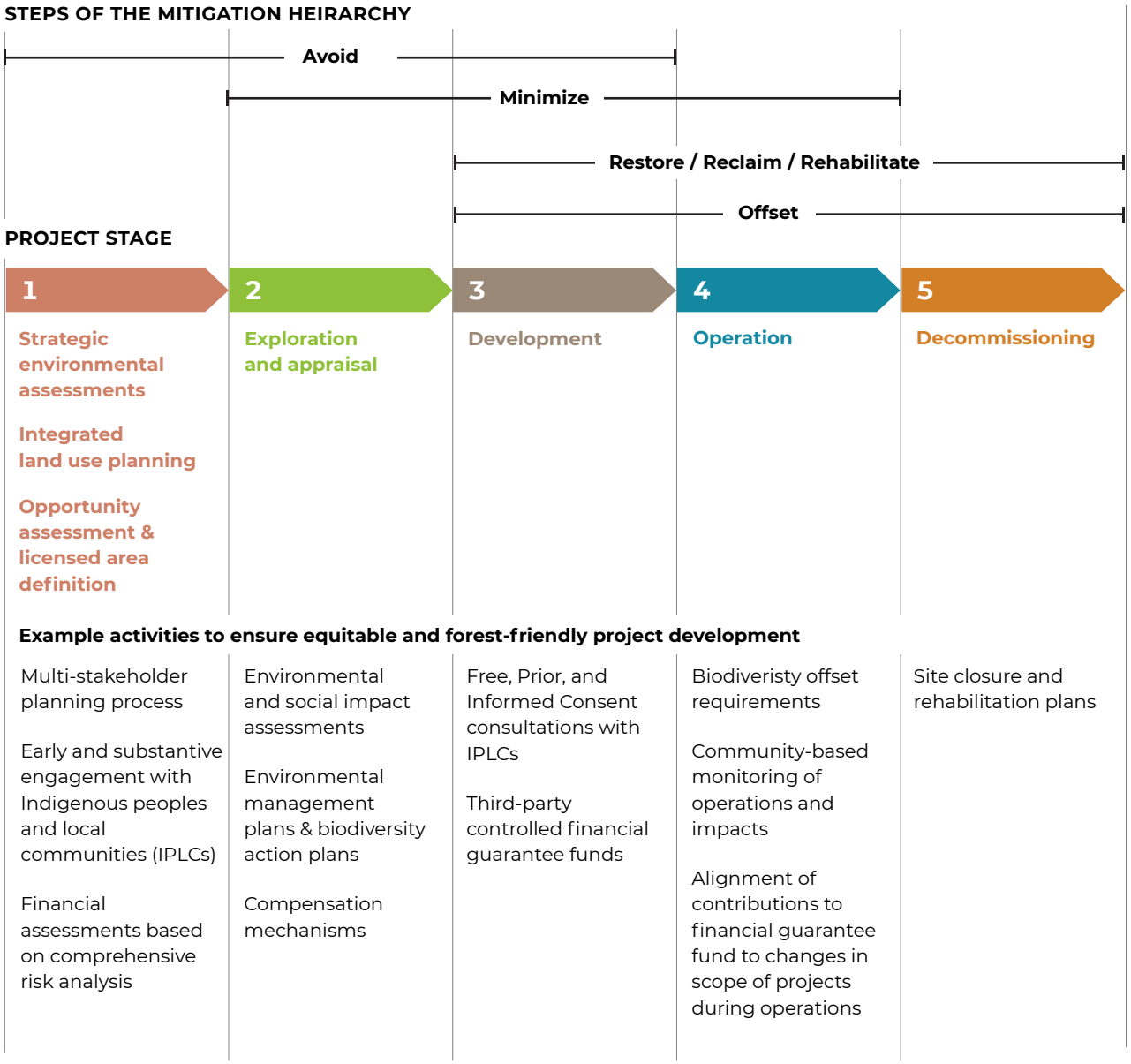
STRATEGY 3:
Apply the 'mitigation hierarchy' to effectively minimize forest impacts from infrastructure projects and extractive industries

Best practice for private- and public-sector decision-makers involves the effective application of the "mitigation hierarchy," a decision framework which allows for the systematic consideration of negative forest impacts and mitigation options. This framework is often incorporated into public standards and company policies, but it also applies to investment or licensing decisions of governments and the financial sector.

The mitigation hierarchy involves four key stages that are relevant across the full lifecycle of projects with the specific processes outlined in legislation, company policies, or funding guidelines **(Figure 3)**. First, it aims to prevent negative impacts, either by avoiding or minimizing impacts. As a second priority, it calls for remedial measures, restoring or offsetting negative impacts. Effective application of this framework requires strong prioritization of avoidance and mitigation. Restoration and offsetting options should only be used as a last resort. To be effective, the mitigation hierarchy should also consider indirect and cumulative impacts.

At the project level, it is best practice for the mitigation hierarchy to start with an environmental and social impact assessment, to identify and consider any risks during the exploration phase. Where risks are identified, decision-makers should develop a management plan to address them and set out mitigation measures during planning, development, operation, and decommissioning of infrastructure and extractive sites. In addition, civil society and local community consultations are essential to consider and mitigate the full impact of investments.

Figure 3. Applying the mitigation hierarchy throughout land use planning and project development for infrastructure and extractive industries



Source: Adapted from FFI. (2014). Timing it right: Biodiversity planning for extractive industries.

STRATEGY 4: Apply the 'PRIME framework' to promote sustainable livelihoods *and* address deforestation

Reducing poverty for rural populations that rely on forests or on deforestation to meet their basic needs can go hand in hand with sustainable forest and land use. Building on the PRIME framework[g] developed by Shyamsundar et al. (2020),[91] five interrelated dimensions for interventions cover the necessary incentives and enabling conditions for reducing both deforestation and poverty **(Figure 4)**:

- Interventions to boost forest and agricultural **productivity (P)**
- Governance reforms to strengthen land **rights (R)**, both informal and formal
- Regional **investments (I)** in institutions, infrastructure, and public services
- Interventions that enhance **market access (M)**
- Mechanisms that enhance the flow of benefits from forest **ecosystem services (E)** to the poor.

Governments play a central role and are responsible for the design and implementation of interventions across these five dimensions. In addition, companies also carry a responsibility to support communities, directly and indirectly impacted by their operations, to adopt more sustainable practices. The government should also work with investors and project developers, especially in the context of large-scale projects that catalyze deforestation by poor migrants into forest areas. Collaboration is essential, not just between government and companies, but also with civil society and financiers.

This strategy is particularly important for companies that rely on small-scale producers in their supply chains; for example, in palm oil and cocoa or the mining sector. In these contexts, companies can provide support for smallholders to derive greater stability, profitability, and income; to enter group arrangements; and to invite them to join sustainable supply-chain efforts.[h] In addition, the PRIME framework can inform the design of interventions by civil society, official development assistance, or social investments by the finance sector.

g The original PRIME framework focuses on interventions for forest-dependent communities and does not include small-scale agriculture and ASM activities.

h Detailed guidance for companies on ethical engagement with small-scale actors has been developed by the Accountability Framework initiative.

Figure 4. An expanded PRIME framework and indicative interventions to reduce both deforestation and poverty

	 SMALL-SCALE AGRICULTURE	 FOREST USE	 ARTISANAL AND SMALL-SCALE MINING
P	**Productivity**		
	Provide extension services to boost yields and increase resilience, such as through climate-smart agriculture and agroforestry	Improve management of natural forests to ensure sustainable extraction of biomass for fuelwood and non-timber forest products	Enhance technology to increase mineral recovery per ton of material and reduce mercury use
R	**Rights**		
	Secure land rights for smallholders to enable certainty and reduce land grabbing	Secure community rights to forest resources to lower risks and promote longer term investments	Secure mineral access rights for small-scale miners and local communities' land rights
I	**Investments In institutions, infrastructure, and public services**		
	Ensure access to affordable credit	Invest in rural connectivity through roads, electricity, health care, and education	Formalize small-scale mining sector and stengthen miners' associations
M	**Markets**		
	Encourage farmer cooperatives to reduce transaction costs	Legalize and regulate informal markets	Increase reach of responsible and fair trade mining certification schemes
E	**Ecosystem services**		
	Incentivize reduced forest clearing through conservation payments	Promote nature-based tourism	Distribute benefits from protected areas (e.g. jobs, tourism revenues) to local communities

The success of all strategies depends on good governance, transparency, inclusion of affected stakeholders and, in particular, the empowerment of Indigenous peoples and local communities.

Well-designed and well-equipped governance frameworks are essential pre-requisites for implementing each of the four strategies. While there is potential to improve the design of policies and decision-making processes—by improving transparency, allowing meaningful participation, and addressing inconsistencies among different laws,[i] for instance—much progress could already be made through the proper implementation and enforcement of existing policies.

Best practices for the mitigation of negative environmental and social impacts start with meaningful engagement with all affected stakeholders, and obtaining their free, prior and informed consent (FPIC), especially where these strategies concern their formal or informal rights to forest, land, or use during planning and implementation. It is important that local stakeholders are not only consulted and involved in the decision-making for specific investments **(Strategy 3)** or interventions **(Strategy 4)**, but also in higher-level planning processes **(Strategy 2)**.

Particular attention should be given to the empowerment and securing of rights of Indigenous peoples and local communities (IPLCs) **(Box 2)**. Options range from, for example, involving IPLC groups in planning processes at national or international scale **(Strategy 2)**—often just by recognizing their already existing rights, to considering Indigenous world views for the transition to alternative and more sustainable development pathways **(Strategy 1)**.

BOX 2 The role of Indigenous peoples and local communities to protect forests and use land sustainably

An estimated 1.5 billion people live in or near forests,[92,93] of which a significant portion are Indigenous, Afro-descendant, or otherwise distinguished by their customs and traditions and long-standing relationship with forest lands. These Indigenous peoples and local communities (IPLCs) generally have governance systems based on common property and communal land management.

It is increasingly understood that IPLCs play a critical role as stewards of forest ecosystems. Forests and land that are legally owned or designated for use by IPLCs have been linked to

- lower rates of deforestation and forest degradation[94–98]
- better forest and biodiversity conservation[99–103]
- more equitable and sustainable forest restoration efforts[104,105]
- more benefits for more people[106]
- better social, environmental, and economic outcomes overall than forests managed by either public or private entities, including protected areas[107]
- long-term efficiency improvements ("land sparing") in land use when agricultural productivity was increased compared to short-run land sparing on government or privately run land,[108] and
- protection from illegal appropriation by others.[109]

However, many of these communities' customary claims to their lands remain unrecognized.[110] About a quarter of IPLC lands across Asia and Latin America have not been formalized, while over 70 percent remain unacknowledged in Africa.[110] This lack of recognition remains a significant barrier not only to IPLCs' own self-determination but also to global efforts to reduce greenhouse gas emissions from land use, halt biodiversity loss, and enact sustainable development.

i See the 2020 update on NYDF Goal 10 for additional information.

3.2 Assessment framework and methods

Based on the strategies for progress discussed in the previous section, the below assessment frameworks present criteria and indicators to measure progress toward Goals 3 and 4.

We distinguish four criteria for different actors, governments of forest countries, companies, grassroots movements, and the finance sector (including international public donors) **(Table 2)**. We omit Strategy 1, embracing alternative development pathways, from these assessment frameworks due to a lack of common understanding of what these should look like. If Strategy 1 were being pursued by the actors we assess, the evidence would likely emerge through implementation of the other three strategies.

TABLE 2. **Assessment frameworks for Goals 3 and 4**

Criteria	Goal 3 Indicators	Goal 4 Indicators
1. Efforts of forest country governments	3.1.1. Align macroeconomic planning processes and policymaking with forest goals 3.1.2. Regulate forest impacts from infrastructureand extractive industries applying the mitigation hierarchy	4.1.1. Promote sustainable alternatives to poverty-driven deforestation applying the PRIME framework
2. Company efforts	3.2.1. Align company planning with forest goals) 3.2.2. Manage forest impacts from mining operations applying the mitigation hierarchy	4.2.1. Promote sustainable alternatives to poverty-driven deforestation linked to company impacts applying the PRIME framework
3. Grassroots movements	3.3.1. Influence infrastructure and extractive industry planning and development to mitigate forest impacts	4.3.1. Promote sustainable alternatives to poverty-driven deforestation for forest management and prosperous livelihoods
4. Efforts by the finance sector and by international donors	3.4.1. Use safeguards to mitigate forest impacts from infrastructure and extractive industries	4.4.1. Use safeguards to mitigate forest impacts from basic needs activities 4.4.2. Increase green investments in sustainable alternatives to poverty-driven deforestation

With the focus of this report on efforts relevant to forests, biodiversity, or environment, we encountered major data and information gaps. As a result, we cannot comprehensively assess progress or the lack of progress towards Goals 3 and 4. For example, we were unable to identify relevant private-sector initiatives targeting forest risks in the infrastructure sector. We outline major knowledge gaps at the beginning of each chapter.

The following are important methodological choices:

- We chose to combine the assessment of both goals and divide the presentation of our findings by actors due to their direct (e.g. through ASM) and indirect links (e.g. the pull-effect for basic needs deforestation through mining and infrastructure). Due to their relevance for supporting all other actors, we do not separately assess progress made by civil society.
- Due to the lack of granular data, especially quantitative data, we were unable to define a baseline and measure progress from the year NYDF was adopted. This assessment could potentially serve as a baseline for future reports.
- One of the key underlying factors for addressing Goals 3 and 4 is to improve governance. This assessment is focused on governance issues specific to the two Goals, while broader issues also play a role. For example, initiatives in consumer countries to step up the due diligence for the import of forest risk commodities are also relevant to mined goods or smallholder-produced commodities. For more detail on progress made in improving governance, see our Goal 10 assessment.

The assessment relies on an extensive review of literature and information, and where possible, new research was commissioned to close essential data gaps. Due to the lack of quantitative data, we often rely on a review of examples from different countries. Key sources include:

- CDP's new disclosure questionnaires for the metals and mining and coal sectors. These comprehensive frameworks capture information related to how companies in these sectors are managing their impacts and risks, as well as realizing opportunities related to forests and biodiversity.
- The new forest module of CDP's States and Regions questionnaire. These disclosures serve as an important source of data to showcase how state and regional governments are addressing deforestation and forest degradation resulting from mining and other non-agricultural drivers.
- The World Bank's 2019 reports on Forest-Smart Mining. Commissioned by the Program on Forests (PROFOR), these provide the most comprehensive assessment to date of the extent of large-scale and artisanal and small-scale metals and mineral mining in the world's forests. The reports were delivered by a consortium including Fauna & Flora International, Levin Sources, Fairfields Consulting, and Swedish Geological AB.
- A literature review on basic-needs activities that contribute to forest degradation and deforestation conducted by the International Center for Tropical Agriculture (CIAT)
- A review of REDD+ Emission Reduction Program Documents submitted to the Forest Carbon Partnership Facility (FCPF) Carbon Fund
- Original research on smallholder cattle rancher support programs in the Brazilian Amazon conducted by Imaflora
- Literature reviews and field surveys with farmers to examine efforts to reduce deforestation in the smallholder sectors of palm oil in Indonesia and cocoa in Côte D'Ivoire and Ghana

CHAPTER 4.

Progress by governments

Governments define economic development pathways and carry a significant portion of the responsibility for the resulting deforestation. Through national development pathways, macroeconomic planning, taxes and subsidies, governments can influence deforestation trajectories in their countries—using these mechanisms either to enable or reduce the loss of forests by certain sectors or activities. When a government is unstable or weak, its influence may be determined mostly through its absence and subsequent lack of control over the use of a state's resources.

Data on the extent to which national land-use planning and decision-making specifically consider forest impacts and preemptive mitigation measures is generally lacking. This gap is typical of national development planning, especially for infrastructure and extractive industries, which is hallmarked by limited transparency.

In the absence of a structured and comparable dataset on governments' efforts to manage forest loss from mining and infrastructure, the NYDF Progress Assessment commissioned CDP to develop and integrate a forest module into its States and Regions Questionnaire. Over 200 state and regional governments were invited to disclose in 2019 and 2020, of which 21 reported these sectors as drivers of deforestation or forest degradation. Respondents cover some of the regions with high forest loss, including six regional governments in Brazil, three in Indonesia, and two each from Colombia, Mexico, and Peru. Along with this disclosure data, we analyzed REDD+ program documents, databases of relevant policies, and case studies to assess the level and direction of government support for sustainable development.

This chapter describes where and how forest country governments have been taking steps toward reducing deforestation from infrastructure and extractive industries while supporting sustainable and equitable development for rural communities. Broader questions of forest governance are addressed in the Goal 10 assessment.

4.1 Have governments aligned macroeconomic planning processes and policies with forest goals?

Dozens of countries have made progress in developing national forest strategies through REDD+ programs, but their implementation is progressing slowly.

Dozens of countries are setting up REDD+ programs to access payments for reduced forest emissions **(Box 3)**. This process typically requires integrating forest goals into broader national or sector strategies and setting up inter-ministerial coordination bodies. The participant countries in the World Bank-administered Forest Carbon Partnership Facility or the UN REDD+ Programme, for example, engage in REDD+ readiness that requires establishing planning and coordination processes. The government of the Democratic Republic of the Congo (DRC), for example, has included REDD+ into its national economic governance matrix and in its national strategy for growth and poverty reduction.[111] Building on a process of intersectoral coordination, the government has also recently validated a new land-use planning policy.[112]

While policy changes can pave the way for inclusive and comprehensive approaches to tackling deforestation, their implementation is progressing slowly. Only a few countries have received REDD+ payments for results, although there is clear evidence that REDD+ readiness processes have resulted in positive policy changes in many more countries.[113] However, some of these policies may just exist on paper and there is no systematic information on whether they are implemented. Some progress has been temporary, with governments backtracking or, for example, stalling policy developments following political changes.[111]

REDD+ or similar programs to curb deforestation also remain in a small niche, both in funding and political attention, compared to public investment directed toward infrastructure and enhancing transport, trade, and resource extraction; we have little insight into how forest goals or sustainable development are actually taken into account in these plans.[114]

BOX 3. Reducing Emissions from Deforestation and forest Degradation

Through references to decisions previously adopted under the United Nations Convention on Climate Change (UNFCCC), Article 5 anchors the legal framework for Reducing Emissions from Deforestation and forest Degradation (REDD+) in the text of the Paris Agreement:

Parties are encouraged to take action to implement and support, including through results-based payments, the existing framework as set out in related guidance and decisions already agreed under the Convention for policy approaches and positive incentives for activities relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries; and alternative policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management of forests, while reaffirming the importance of incentivizing, as appropriate, non-carbon benefits associated with such approaches.[115]

Results-based finance (RBF) for REDD+ conditions payments upon a reduction of greenhouse gas emissions from forests. Rather than financing specific actions that lead to this reduction, RBF provides an ex-post reward and therefore incentive for forest countries to take these actions. Over the last decade, several multilateral and bilateral programs have emerged and offer RBF in the context of official development assistance. While internationally agreed rules under the UNFCCC do not provide operational levels of detail, these programs differ in their modalities and requirements for recipient countries. Broadly, the process of receiving REDD+ RBF starts with a readiness phase in which countries invest in the strategies and processes to get access and make use of financial resources for REDD+. In a next phase, countries implement the policies and measures to achieve emission reductions in the forest sector.

CDP finds that most state and regional governments reporting on mining and infrastructure have adopted policies to address the impact of these drivers. Few governments, however, have translated their policies into forest management plans or systematically assessed their forest risks.

Out of 18 governments who reported mining as a driver of deforestation or forest degradation in their jurisdiction to CDP, nine had adopted policies to address this driver **(Figure 5)**. The share was higher for the infrastructure sector, with eight out of 11 governments reporting the sector as a driver also having adopted relevant policies. Examples of policies or actions to manage forest impact include integrated land-use planning and management, adoption of afforestation strategies, and enforcing forest policies and regulations.

A policy that seeks to address both mining and infrastructure drivers is Caquetá's Integrated Strategy to Control Deforestation and Forest Management. It establishes a forest management plan for the Colombian Amazon department of Caqueta, based on a sustainable integral rural development approach. Caquetá's policy contributes to the livelihoods of local communities and local development as well as improved ecosystem resilience to support climate change adaptation and mitigation. Another example is the policy reported by the Brazilian state of Pernambuco. This policy pursues the protection of flora, fauna, and essential ecological processes; the preservation of biodiversity; the recovery of degraded areas and protection of areas threatened with degradation; the improvement in awareness of and education about protecting forests; and the economic and social development needed to improve quality of life and maintain ecological balance.

However, only a few governments that reported to have published forest management plans address mining and infrastructure risks. Such plans are important to translate high-level forest policies into coordinated programs and outline the steps that should be taken to achieve forest protection.[116] Out of the state and regional governments who reported that they have already published a forest management plan, only four—Jalisco, Piura, Wales, and West Kalimantan—address mining. Several other regions reported that they are in the process of developing such plans.

In West Kalimantan, for example, the government implements a Provincial Strategy and Action Plan on REDD+ as part of the low emissions development scheme and mitigation action on climate change. In Jalisco, Mexico's forest management plan that addresses mining, implementation involves creating an operating committee and collaboration mechanism to coordinate different strategies and programs. These include a National Strategy for the Increase of Sustainable Production as well as the state's strategy for the conservation of biodiversity.

Governments have designated almost 18 percent of global forests as protected areas. Where properly enforced, this status can avoid or limit the impact of infrastructure and extractive developments.

In 2020, more than 726 million hectares or 18 percent of forests fall within protected areas worldwide, with South America having the highest share of its forests (31 percent) in protected areas.[117] Designated protection is an important signal and tool for the conservation and sustainable use of forests. However, protected areas are not necessarily off-limits to development. The legal status of protected areas differs across forest countries, as does the ease with which countries can reduce the level of protection. For instance, in national parks in Bolivia, the government changed legal frameworks for mineral rights to supersede conservation rights, while in Peru, gas and oil drilling is prohibited within all national parks.[118]

One form of protected area designation that is underrecognized, but which has been critical in reducing deforestation, is the allocation of reservations for Indigenous peoples in voluntary isolation and initial contact. These communities are known to exist in Asia, in West Papua and in the Andaman archipelago, and in South America, concentrated

in the Amazon and parts of the Chaco region.[119] Of the six Latin American countries with uncontacted communities, many had made progress since 2005, when the first international meeting on Indigenous peoples in isolation was held in Brazil, in recognizing the existence of these groups and designating protected territories for their use.[119]

More than 32 percent of protected forest areas in the world, including Indigenous territories, are under intense pressure from, largely illegal or informal activities driven by small- and large-scale actors.[120] As a result, since 2002, more than eight million hectares of tropical primary forests in protected areas were lost globally, reducing protected forest areas by 2.2 percent.[121] For example, in Tanzania, forest loss in protected areas is even higher than in unprotected areas.[122] Ongoing pressures from planned megaprojects, resource-based development, and illegal operations also place uncontacted Indigenous communities under threat.

A major reason for this lack of protection of national parks and protected areas is that park management authorities are under-resourced and understaffed. Paraguay, for example, has one park ranger for every 38,000 hectares of protected forest, while the IUCN recommends staffing of one park ranger for every 1,000 hectares.[123] Nonetheless, approaches that look solely at protection but not the alleviation of social and economic challenges faced by the local communities living in and around protected areas, and whose means of livelihoods depend directly on the resources in situ, fail to provide sustainable and effective results. In addition, there are often conflicts in government policies; for example, allocating mining concessions into or near protected areas.[124] Globally, an estimated six percent of protected areas are subject to large-scale mining.[125]

In recent years, accelerated now by the COVID-19 pandemic, many governments are relaxing regulations for protected areas. While theoretically the impact on forests may be justified by other sustainable development benefits, it is unclear if and how trade-offs are considered and carefully calculated in decision-making.

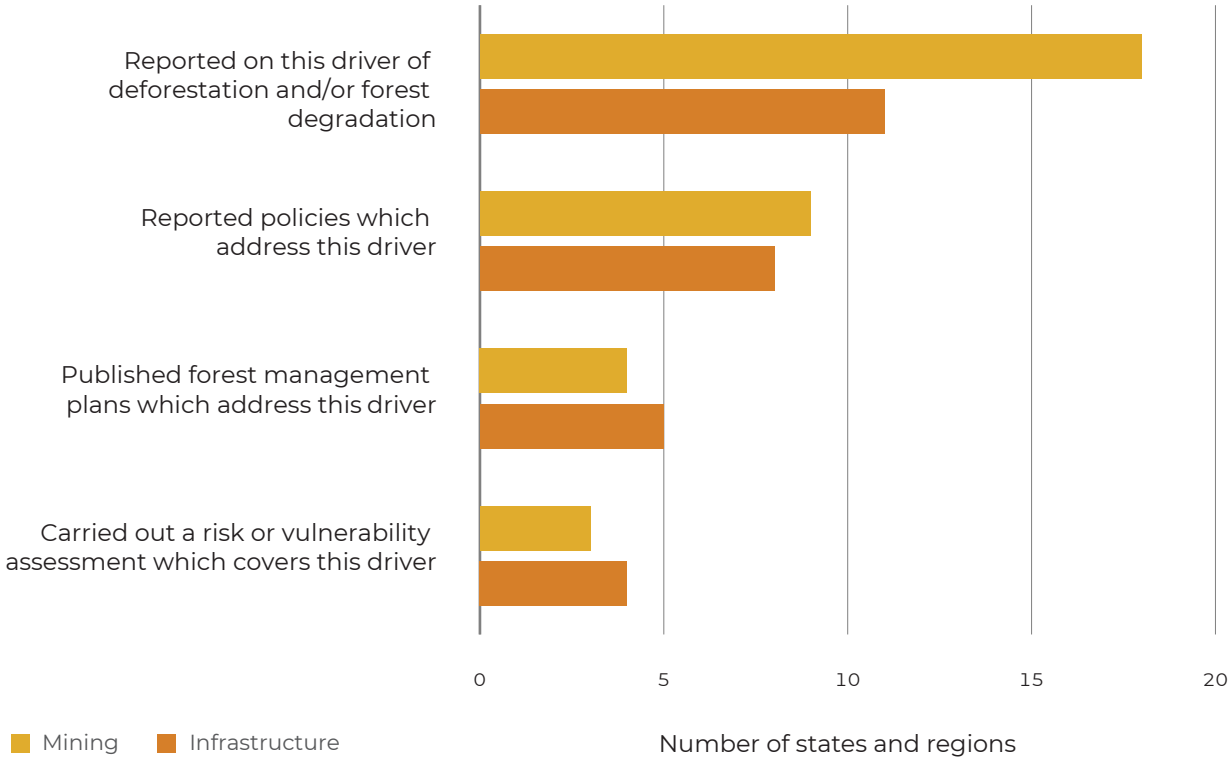
Governments argue in favor of national strategic interest or security to justify mining, agriculture, or infrastructure projects and the necessary legal reforms to subject protected areas to downgrading, downsizing, or degazettement (so-called PADDD[j] events). Such reforms reflect a poor valuation of the economic benefits of protected areas, and, especially in Latin America, have resulted in clear threats to forests. In Peru, as a result of these reforms, between 2000 and 2010 deforestation and carbon emissions rates were 275 percent higher in PADDD affected forests than in other still protected forests, and even 45 percent higher than in unprotected forests.[126] In Brazil, recent legal changes were made to allow the construction of hydropower dams, while Ecuador and Venezuela authorized infrastructure and extractive activities.[k]

More recently, governments are promoting extractive industries in the wake of the COVID-19 pandemic. With the looming economic crisis, officials are increasingly under pressure to relax regulations and laws. In Mexico, the government is bailing out the largest oil company and supporting it by increasing its exploration capacity and preparing for an intensive production phase once demand increases.[127] In Peru, which is highly dependent on mining—providing 60 percent of the country's exports—the government has taken measures related to citizen participation and environmental permits and sanctions, which civil society organizations fear may reduce social and environmental standards.[128]

j While downgrading is the decrease of legal restrictions that define the number, magnitude and extent of human activities in a protected area, downsizing is the decrease of the size of a protected area due to excision of land/sea area through a legal boundary change. Degazettement is defined as a loss of the legal protection of an entire area. In some cases, PADDD events can be beneficial for forests, for example where the purpose of downgrading is for the establishment of management infrastructure.

k Certain countries have also ceded certain protected areas to Indigenous peoples and local communities. While these are technically PADDD events, the ensuing threat to forests is generally much lower than PADDD to enable extractive activities and infrastructure development.

Figure 5. Number of states and regions responding to CDP



Note: A total of 21 state and regional governments reported mining and/or infrastructure as a driver of deforestation or forest degradation.

Source: 2019 and 2020 data disclosed through CDP's States and Regions questionnaire

4.2 Are governments applying the mitigation hierarchy to infrastructure and extractive industry developments?

Many forest countries regulate infrastructure and extractive industry investments to reduce forest loss. This includes requirements for environmental and social impact assessments, mine closure and rehabilitation, and biodiversity offsetting.

Most countries have adopted requirements to conduct environmental and social impact assessments (ESIAs) of proposed development projects. For example, all of the 18 resource-rich countries assessed by Transparency International have laws and regulations that require companies to consult with local communities affected by mining and to assess the environmental impact of mining activities.[129] In Asia and the Pacific, another study found that most countries adopted requirements for conducting ESIAs and preparing environmental management plans before the start of mining exploration and extraction projects.[130]

Many countries also include requirements for mine closure and rehabilitation plans in their natural resources allocation regulations and policies. For example, most of the 22 countries and jurisdictions who are members of the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development require the submission of a mine closure and rehabilitation plan and the inclusion of a financial guarantee to ensure that proper mine site closure and rehabilitation will occur.[131] In the Canadian province of Alberta, home to the largest known crude bitumen deposits in the world, and where forest disturbance is among the highest in the country, the government requires land to be returned to an equivalent land capability, whereby disturbed land should be able to support various land uses similar,

but not necessarily identical, to pre-disturbance.[132] The province's Environmental Protection and Enhancement Act stipulates that companies seeking approval need to conduct an evaluation of land capabilities prior to commencing activities as part of the environmental impact assessment.[133,134]

As of 2017, 115 countries, including many where mining is an important sector,[135] had biodiversity offset and compensation policies.[136] Compensation for biodiversity loss, including offsets, are legal requirements for project permits in 37 countries.[135] These policies are often adopted to achieve political goals of "no net loss."

In many countries, one or more regulating policies are poorly designed and do not reflect the mitigation hierarchy or consider the full range of direct, indirect, and cumulative impacts. Some countries are also rolling back environmental requirements to ease approval processes for new development projects.

ESIA policies in the mining sector often fail to consider the indirect impact of the mine, such as infrastructural developments and population settlements that may result in deforestation.[39] For example, in Malaysia, where ESIAs are a legal requirement for infrastructure projects, the process is limited to potential local impacts within a limited spatial scale, and does not require identification of indirect risks related to roads.[137] In Indonesia, for geothermal exploration, a lighter form of environmental planning and mitigation and monitoring plan is required rather than the full environmental impact assessment required for the exploitation phase, even though exploration often requires forest clearing and extensive road construction.[138]

Furthermore, in most countries, ESIAs are not required for mining and infrastructure developments until a company applies for a license to operate after exploration has been completed.[129] In such cases, the environmental assessments are much less effective in influencing decision-making by licensing authorities and lead to less effective controls to mitigate environmental harm.[139]

Some governments are also actively rolling back (weakening or eliminating) regulations intended to require project planners to assess and address anticipated environmental impacts. In the United States of America, for example, in July 2020, the Trump administration announced the weakening of environmental regulations undergirding the National Environmental Policy Act by putting a time limit of one to two years on environmental impact assessments for infrastructure projects like highways and pipelines, while also limiting public review of these documents.[140] Notably, the rollback explicitly releases federal agencies from considering a project's indirect or cumulative environmental effects. Affected communities will likely also have fewer opportunities to weigh in on project considerations.

Similarly, offsetting policies suffer from weaknesses in design, such as the limited consideration of project impacts. If the area set aside as a biodiversity offset becomes economically interesting for a company in the future, it can be licensed and financed simply by another development project. For example, in Uganda, when the reservoir created by the Bujagali dam flooded ecologically significant waterfalls and riverbanks of great cultural importance in the project area, the project developers claimed that "comparably important" waterfalls and riverbanks would be set aside in perpetuity as a biodiversity offset. However, another hydropower developer soon obtained permission for another dam to be built along the offset area of the River Nile.[141]

In addition, offsetting policies often fail to prioritize the first two steps in the mitigation hierarchy. Just a third of the 115 countries with biodiversity offset policies require biodiversity compensation and offsets to be used only as a measure of last resort, after the maximum avoidance and minimization fails to prevent all impacts.[135] Even if implemented effectively—considering the scale of cumulative forest loss associated with infrastructure and extraction and the questions around ecological effectiveness and project longevity—biodiversity offsets do little to reduce overall and irreversible forest impacts.[142]

Because biodiversity offset approvals often skirt strict regulations, they fail to serve their purpose in balancing development and conservation.[143]

Even where policies are aligned with the mitigation hierarchy, enforcement is inadequate.

Limited enforcement capacity results in delays in approvals, weak integration of relevant aspects in ESIAs, and missed opportunities to effectively involve affected local communities.[131] Governments in developing countries often fail to oversee the ESIA process, verify its results, and monitor the implementation of the approved management plans.[12] Moreover, the effective enforcement of ESIAs in many countries is impaired because of a conflict of interest between government agencies that approve ESIAs (e.g. Ministry of Environment) and those who issue permits for extraction and development projects (e.g. Ministry of Mining).[131,144]

Most government authorities, across developed and developing countries, lack the capacity to verify ESIAs' content.[129] For example, in Latin America, a review of 75 proposed road construction projects in Brazil, Bolivia, Colombia, Ecuador, and Peru found that most lacked a rigorous ESIA and little attempt has been made to assess their cumulative environmental impacts; therefore, if these projects are implemented, they could result in 2.4 million hectares of forest loss in the Amazon basin in the next 20 years.[145] For the Interoceanic highway, constructed in the early 2000s in Peru's southeastern Amazon Basin, ESIAs were conducted in sections rather than analyzing the total impacts of the road as a whole.[146] In these and other cases, ESIAs can become a meaningless "tick-box exercise", undermining public confidence in the legitimacy of the approvals regime and creating the risk of serious environmental and social harm.[147]

Biodiversity offset policies' effectiveness is further weakened by a lack of monitoring or coherence of priorities across government agencies.[148] In the implementation of the Nimba Biodiversity Conservation Program—an offset program in Liberia—establishing a rural management strategy that effectively bridges forestry, agriculture, and other land use sectors remains a major challenge.[148] Australia faces a similar hurdle in involving multiple government agencies in a complex landscape of agriculture, forests, mining, and other land uses, and securing suitable like-for-like offsets that have sufficient integrity.[148]

4.3 Are governments promoting sustainable alternatives to poverty-driven deforestation covering all PRIME dimensions?

As part of their jurisdictional REDD+ programs, many countries are planning support programs that are more or less aligned with the PRIME framework.

Among the 17 forest countries that have developed REDD+ programs **(See Box 3)** under the Forest Carbon Partnership Facility Carbon Fund, nine have planned activities to support sustainable agricultural production, such as livestock farming and charcoal production without deforestation in their program areas.[l] Activities target deforestation driven by poverty and cover all PRIME dimensions **(Box 4)**, including productivity (e.g. technical support), rights (e.g. land reforms), institutions (e.g. capacity building for community forest management), market access (e.g. technical support), and ecosystem services (e.g. payment for ecosystem services schemes). Most countries cover at least several of the five dimensions. These activities are funded by domestic and international donor funds **(see Section 7.2 for details)**.

l Based on Climate Focus analysis of 17 Emission Reduction Program Documents submitted to the Forest Carbon Partnership Facility Carbon Fund.

BOX 4. Examples of REDD+ program activities planned by 17 countries to support livelihoods and reduce deforestation

Activities to support sustainable agricultural production:

- Improving productivity by providing technical support, market access, financial and insurance support, and other inputs (Côte d'Ivoire, Dominican Republic, Ghana, Guatemala, Madagascar, Mexico, Mozambique, Nicaragua, Peru)
- Promoting alternative livelihood through crop diversification and agroforestry, ecotourism, and off-farm employment (Fiji, Democratic Republic of the Congo (DRC), Guatemala, Lao People's Democratic Republic (PDR), Madagascar, Mozambique, Nepal, Nicaragua, and Republic of the Congo (RoC))
- Create a sustainable agricultural supply chain through:
    - Promoting a public-private network that involves the administration and management of the area (Chile, Madagascar, Peru, Vietnam)
    - Establishing the standards and certification of practice (Chile, Dominican Republic, Ghana, Madagascar)
    - Developing other underlying infrastructure such as storage facilities, trading centers, extension services, and research (RoC)

Activities to promote sustainable forest-related practices:

- From the supply side, various activities are promoted, including:
    - Raising awareness about sustainable environment and forest management through education programs, information and knowledge dissemination, and workshops (Côte d'Ivoire, Dominican Republic)
    - Encouraging multi-stakeholder engagement in sustainable forest management (Ghana), and the inclusion of marginal groups such as women and Indigenous communities (Chile, Dominican Republic, Guatemala, Nepal and Nicaragua)
    - Setting up PES mechanisms as an incentive to conserve and restore forest (Dominican Republic, DRC, Guatemala, Mexico, Peru, RoC)
- From the demand side, agricultural residues (Côte d'Ivoire), biogas units, and improved cookstoves (Nepal) are promoted as an alternative to fuelwood as an energy source.

Activities to improve governance:

- Strengthen institutional frameworks:
    - Land use planning to be compatible with forest conservation (Dominican Republic), and to prevent competition between rural and urban development (Mexico)
    - Inter-ministerial regulation and harmonization of policies to implement applicable forestry projects (Dominican Republic, Guatemala, Madagascar)
- Law enforcement and monitoring:
    - Improving the transparency of the commodity prices, so that farmers are ensured with formal price (Ghana)
    - Strengthening the institutional and municipal capacity through finance and human resource training (Indonesia, Mozambique, Chile, Ghana)
    - Supporting community forest management (Chile, Dominican Republic, Lao PDR, Mexico, Nicaragua, Peru, RoC)
- Legal reform:
    - Improving land security (Indonesia)
    - Land reform (Côte d'Ivoire, Dominican Republic, Indonesia, Mozambique, Peru)

Outside of REDD+ programs, governments that promote smallholder productivity to remove pressure from forests often fail to invest in rights, institutions, public services, and market access. The implementation of support generally, and in alignment with forest and poverty reduction goals (i.e. addressing all PRIME dimensions), is impaired by a lack of funding and capacity of relevant government institutions.

Support for subsistence and smallholder farmers to increase productivity through intensification is often provided in the context of poverty reduction and agricultural development programs. For example, several countries, including Indonesia and Cameroon are promoting intensification and permanent forms of cultivation where extensive agriculture systems such as shifting cultivation are prevalent.[149] Ghana and Côte d'Ivoire provide extension services to cocoa farmers to build their capacities to increase their productivity and income.[150,151] Similarly, Brazil operates several incentive programs targeted at smallholder and improved practices, in particular, the rural credit program.[152]

In many developing countries, because of limited resources and budget, extension services are scarce and adoption of good practices by farmers is very limited. In Sub-Saharan Africa, where public and private extension is weak, agricultural productivity has grown very slowly compared to global averages over the last four decades.[153] Complementary investments in infrastructure and public services aligned with forest goals would be needed to ensure their effectiveness in reducing deforestation and poverty.

In the Brazilian Amazon, for example, smallholder cattle ranchers that practice extensive farming especially lack access to technical assistance. The main limitation is the lack of qualified extension officers **(Box 5)**, while basic services, such as health and education, are also limited.[154] Similarly, in Indonesia, extension services lack capacity and play a limited role in promoting better agricultural practices among smallholder palm oil farmers.[155] In the cocoa sector in West Africa—another smallholder sector tied to commodity markets and characterized by poor land management and widespread poverty—there is some indication that government support had positive effects on productivity. The impact on forests is, however, still unclear and there are risks that increased productivity leads to additional deforestation **(Box 6)**.[156]

BOX 5. Case study: Successful rural settlement support programs at risk from lack of supportive policies in Brazilian Amazon

A comparative study of technical assistance programs in two rural settlements in the Brazilian Amazon demonstrates both the successes and consequences of Brazil's approach to rural development.[152,157] Over the last three decades, the Brazilian government, pushed by popular protest movements, has pursued agrarian land reform to address landholding inequalities. The 2nd National Plan for Agrarian Reform reoriented this reform toward a conservative approach, in which land did not change ownership. Instead, the government founded rural settlements—settlement projects (PAs for the Portuguese abbreviation) and Sustainable Development Projects (PDSs)—where smallholders only had the right to use but not to own land.

Evidence from the São Paulo PDS in Mato Grosso and the Tuerê PA in Pará demonstrates the challenges to environmental and social sustainability of community livelihoods due to incomplete interventions and a lack of follow-through in supportive policies. In both settlements, technical support from NGOs to settler cattle ranchers promotes alternative livelihood activities, income diversification, and increased productivity. When Mato Grosso's São Paulo PDS was first established, before settlers received this support, there was a rapid period of deforestation as riparian forests were harvested to build houses, and pasture expanded from 12 to 45 percent of the settlement area. Since 2014, technical training in agroforestry and a solidarity finance program,[m] both led by the NGO Instituto Ouro Verde, have supported a transition to diversified income streams from silvopastoral fruit and dairy production. Average incomes have doubled compared to 2013 and are now almost twice the Brazilian minimum wage, while no additional forest areas have been cleared since the start of the program.

Similarly, in the Tuerê PA in Pará, a program by the NGO Solidaridad has, for five years, targeted 225 of the 3,000 families in the settlement. The farmers have received support in adopting best practices and introducing agroforestry to their cocoa production systems, resulting in an average productivity increase of 37 percent. In addition, the conversion of degraded pasture to cocoa agroforestry has sequestered an average of 12.1 tons of carbon dioxide per hectare per year. Meanwhile, Solidaridad has helped farmers build a direct market connection to international cocoa buyers while building a brand identity around high-quality and award-winning chocolate. Incomes have increased for the families involved. The program has utilized its budget to scale up its effort to roughly seven percent of families in the settlement. However, the vast scale of territories in the Brazilian Amazon compared to funding limitations makes scaling beyond this level challenging.

Both programs' successes thus far are tenuous because the productivity interventions are not fully complemented by other supportive interventions and policies. In São Paulo PDS, farmers do not have a long-term plan to move their fruit and dairy to markets; currently, they rely on the NGO and a borrowed truck to move their goods 30 to 50 kilometers over rough roads. In Tuerê, local banks' de facto credit policies create perverse incentives to expand cattle ranching rather than adopt sustainable practices. While, in theory, the banks can provide credit for alternative economic activities not included in zoning plans, they perceive these as riskier; and for credit lines intended specifically to fund sustainable practices, the banks require the same guarantees of small farmers as they do of large operations. Families in both settlements face increasing pressure and harassment to rent or sell their allotments to miners, loggers, or other cattle ranchers moving into the region. Without a reliable source of income from diversified activities, many families are considering abandoning their lands and moving to the city, putting the success that these programs have achieved at risk.

m According to the Brazilian Ministry of Economy, solidarity finance is supported based on community development banks, solidarity funds, and solidary credit cooperatives. Community banks are solidarity-based financial services of an associative nature, aimed at generating employment and income in local economies. They are characterized as an informal credit organization. They are usually created by NGOs, municipal governments, social movements, and producer associations.

BOX 6. Examples of interventions that support smallholder productivity

In the Indonesian smallholder palm oil sector, extension services at the district level are generally underfunded and unable to provide trainings to smallholders.[158–160] For example, in Rokan Hulu, a district with more than 25 percent of its area cultivated with smallholder oil palm, extension workers do not train smallholders and there are no programs that would target information dissemination and transfer to independent smallholders.[158]

A survey of cocoa smallholders in Ghana (Western North and Central regions) , commissioned by the NYDF Progress Assessment, found that attendance in trainings for better practices organized by the government increased productivity by 16.1 percent compared to farmers that did not receive support. In Côte d'Ivoire, a similar survey found that trainings organized by the government, civil society, and companies led to an increase in income of 33.3 percent.[156]

In 2017, only 20 percent of farmers received technical assistance in the Brazilian Amazon region. The government has implemented several incentive programs targeted at smallholder and improved practices, in particular the rural credit program (PRONAF and its ECO subprograms), however, their effectiveness has been limited. One of the major limitations of this program is that access to finance is conditional on the preparation of a technical proposal as well as compliance with environmental regulations. This is difficult and costly for many smallholders, and requires capacity building, which is lacking.[152]

Many governments are also struggling to address security of tenure and land rights for farmers, forest users, and small-scale miners. Rights are often contested among powerful and less-powerful actors.

Land rights recognition has been demonstrated to be effective in many countries, and under certain conditions, at reducing deforestation while supporting livelihoods. In Benin, recognition of customary land rights led to an overall reduction in forest loss by enabling investments in agricultural productivity and community forest management.[161] A survey of palm oil smallholders in Sumatra, Indonesia found that having land title was positively associated with decreased deforestation.[162] The formalization of ASM, through securing mineral tenure rights alongside effective enforcement, has reduced forest loss and other environmental impacts from these activities.[52,163]

Tenure insecurity is widespread across forest countries. A 2020 review of 42 countries, comprising half of the world's land, found that at least 46 percent of community lands were not legally recognized by national governments.[110] While aggregate data on progress in recognizing IPLC lands as well as land rights of small-scale farmers is lacking, it is clear that interventions to address insecure rights face various challenges. In Latin America, for example, the governments of Argentina, Colombia, Honduras, Nicaragua, and Peru have all adopted legal regimes that recognize the rights of IPLCs to their lands but many communities have yet to receive their titles.[164]

Land rights formalization can have unintended effects when not paired effectively with other PRIME interventions. In Ghana, for example, a study found that, unless other factors like access to finance, agricultural inputs, and targeted extension services are present, tenure security will not reduce deforestation.[165] Similarly, a study of farmers in Brazil suggests that, unless other forest protection measures such as strong enforcement are in place, tenure security through land titles alone will not reduce deforestation.[166] In Ghana, decentralization of responsibility for ASM regulation was paired with incomplete designation of relevant powers, leaving local governments unable to effectively manage the sector.[167] In the Madre de Dios region of Peru, a shift in government policy from promoting to containing ASM[168] was not accompanied by sufficient supports to the most vulnerable miners, while medium-scale miners adopted technologies that allowed them to evade detection.[169]

While programs have been implemented at large scale only in a few countries, well-designed community forest management and payment for environmental services schemes have shown positive impacts on forests and livelihoods.

Community forest management (CFM) and payments for environmental services (PES) **(Box 7)** have emerged as popular strategies for sustainable forest use, with many countries developing and implementing policies and trial projects. CFM schemes **(Box 8)** have yielded results in both poverty alleviation and forest conservation where governments in collaboration with civil society were able to carefully assess community needs and capacities and had a clear understanding of the economic potential of different options for forest and land use. Furthermore, institutional structures that assure secure tenure and rights are also important in these areas where, generally, access to forests is open and government administration is weak.

In addition to building the necessary institutions, successful interventions by governments and civil society also invested in other PRIME dimensions, such as productivity (e.g. supporting forestry enterprises), institutions (e.g. forestry planning), and market access (e.g. certification), supported through consistent funding and support by civil society. Thus, they indicate the need for multifaceted approaches.

Payments for ecosystem services have also gained traction, with an estimated 550 programs worldwide paying USD 36 billion altogether.[177] In many cases, these programs' effectiveness and their impacts on forests and other ecosystems are unknown.[178–180] However, several cases in Brazil, Cost Rica, Mexico, and Vietnam point to positive to mixed outcomes.[181] PES programs in Brazil, for example, have shown some limited success in reducing deforestation in the Amazon, although the factors underlying these achievements are not clear.

BOX 7. Examples of Payments for Environmental Services schemes

The Program to Support Environmental Conservation or the Green Grants (Bolsa Verde) in Brazil, initiated to reduce poverty and protect forests, has resulted in reduced deforestation among smallholder farmers in the Amazon. The 48,000 beneficiaries of Bolsa Verde at the end of 2017 were residents of Extractive Reserves, riverside dwellers, and settlement projects settlers.[182] Deforestation among beneficiaries declined up to five percent by enforcing peer monitoring.[183] The Program, which ended in 2018, made a direct payment of BRL 300 every three months to the participant families on the condition that they complied with environmental laws.[182]

The Bolsa Foresta, a similar program initiated in the Amazon in 2008, covers 9,600 households and more than 10 million hectares of forest.[184] It pays families, including smallholder farmers, to meet several conditions, such as a zero-deforestation commitment and children's enrollment in school. The program seems to have had a significant impact, reducing the deforestation rate by more than five percent in areas with medium deforestation risks. However, it did not have a significant impact in all areas covered by the program, suggesting that effectiveness could be increased by extending it to high deforestation risk areas.[184]

BOX 8. Examples of community forest management schemes

In 2014, the Indonesian government adopted an ambitious target under the Social Forestry Initiative to allocate some 12.7 million hectares of forest land to marginalized communities. Of this area 2.3 million hectares have been assigned, and community forest management has helped to protect forests.[170] The program aims to halt deforestation and resolve land tenure conflicts by putting forest management back in the hands of local communities. In some regions, the program has been associated with reduced deforestation, but this varies. The program's success stemmed largely from complementary interventions. Another Indonesian program called Village Forest has successfully avoided deforestation overall between 2012 and 2016.[171] The scheme, established in Sumatra in 2009 and in Kalimantan in 2011, aims to improve marginalized communities' social welfare and forest use rights by allowing forest to be managed communally through the authority of a village head.[171]

The Maya Biosphere Reserve in Guatemala provides one of the most successful examples of community forest management. The program managed to reverse the land's historical status as an agricultural frontier to an area governed by the principles of biodiversity conservation paired with sustainable development. Forest-dependent communities in the northern Petén region successfully lobbied the Guatemalan government to pioneer a new model for community-based concession. The resulting community-based business and protection models have resulted in lower rates of deforestation than adjacent protected areas.[17] However, the communities face an uncertain future due to the limited terms of the concessions and competing visions for the area, emphasizing tourism as a development alternative.[172] **(see also Box 14)**.

In the Congo Basin, while community forest management has shown the potential to increase forest stock, improve rural livelihoods, reduce poverty, strengthen civil society organizations, and contribute to decentralized governance,[173] the model has continuously encountered difficulties.[174] Governmental implementation of these programs is often inconsistent, and community management, which is often driven by external finance, is costly to sustain and can have trouble competing with local alternatives. In Cameroon, for example, effective community management faces a number of challenges: a 5,000-hectare size limit generally does not correspond to the size of forest land that these communities traditionally occupy and exploit, and the limited 25-year duration of the community forest status does not promote long-term investment for these communities into their forests. Moreover, despite stated efforts to streamline the process, obtaining the status of community forest in Cameroon remains highly complex for the local communities, namely due to the literacy rates and capacities of the communities, which the government continuously fails to address by allocating limited resources to capacity-building and technical support to these communities.[175]

Nepal has a longstanding community forest management program, established in the 1970s. By 2009, a quarter of the country's forests were managed directly by one third of the population. A study has found that placing forests under community control has led to reduced deforestation and poverty in Nepal and increases the likelihood of both positive environmental and socio-economic outcomes.[176] However, impacts on forests are poorer in areas where poverty rates are higher, suggesting poorer areas may require additional support to minimize trade-offs between socioeconomic and environmental outcomes. Large community forests that have been established for longer are also associated with positive socioeconomic and environmental outcomes. These results indicate that greater benefits may result from longer-term investments and larger areas committed to community management.

CHAPTER 5.

Progress by companies

The launch of the NYDF in 2014 represented a major step forward in the recognition that companies have an essential role to play in reducing deforestation and ending natural forest loss. Company decisions can lead directly to forest clearance, while investments can also fundamentally alter local economies. The longer-term effects of investment decisions reverberate through forest regions as projects and roads stimulate migration and a change in livelihoods.

Companies within the extractive sector are increasingly recognizing their forest impacts, and corresponding responsibilities, although mostly in the context of biodiversity protection. However, corporate disclosures related to forests remain very limited across the sector. To address this gap, CDP Forests, commissioned by the NYDF Progress Assessment, expanded the scope of its forest disclosure framework in 2019 to include new sector-specific questions for metals and mining and coal companies, sectors previously only targeted by CDP's climate change and water security disclosures. The resulting dataset and accompanying analysis of corporate sustainability reports (Box 9) provides a comprehensive assessment of current corporate action in the sector related to forests and biodiversity. Along with presenting this disclosure data, we also examine sector standards to promote responsible mining practices and sustainable infrastructure development, noting how they address forests and the scale of their adoption.

Where companies in the agriculture and large-scale mining sectors rely heavily on small-scale producers—such as cocoa, palm oil, and beef supply chains, and some metals and minerals—they may also bear responsibility, to a greater or lesser extent, for the environmental and social risks posed by producing those commodities. We report here on efforts by companies in mineral and agricultural supply chains to engage these small-scale actors, based on disclosures and review of sustainability reports, as well as through the use of ASM certifications.

This chapter describes measures that companies are taking to mitigate forest loss from mining and extractive projects, associated infrastructure development, and small-scale commodity production within their supply chains, and where possible, the extent to which these measures have been effective.

5.1 Have companies in the mining sector aligned their planning and commitments with forest goals?

Most assessed companies in the mining sector have made commitments to stop biodiversity loss. However, it is difficult to gauge ambition and progress, or even understand what companies are planning.

A large share (78 percent) of companies assessed by CDP have made a biodiversity-related commitment. This is a sign of progress, especially considering that about half of this sample represents companies with the largest share of mining operations in forests, and about 22 percent of assessed companies are among the 25 key mining companies globally. Most companies have also indicated that biodiversity or the environment are considered at board and/or senior management level. This is important as corporate boards and senior management need to understand how these issues affect business strategy and performance.

BOX 9. CDP Forests' disclosure request and complementary analysis of efforts by mining companies

For this report, CDP analyzed data from 45 mining companies. This includes 23 companies that self-reported and disclosed data through CDP in 2019 and/or 2020 out of 225 companies invited, and 22 companies assessed based on data from corporate sustainability reports.

The list of companies assessed includes 10 of the largest 25 mining companies, based on their market capitalization[185] and 27 companies with the highest number of mining operations in forests.[39] Assessed companies include: Vale S.A., the world's largest producer of iron and nickel; Carajás, located within the Carajás National Forest in the Amazonian state of Pará, Brazil, the operator of the world's largest iron mine; Lynas Corporation Ltd., the world's second largest producer of Rare Earths; Newmont Corporation and Barrick Gold Corporation the world's largest gold mining companies; Polyus PJSC, Russia's largest gold mining company; Banpu Public Co Ltd. the world's third-largest gold company by reserves base; Petra Diamonds Pty Ltd., one of the largest coal miners in Southeast Asia; Freeport-McMoRan Inc., manager of one of the world's largest diamond resources; and AngloGold Ashanti, miner of one of the world's largest copper and gold deposits in the Grasberg minerals district in Papua, Indonesia who, together with Barrick Gold Corporation, own Kibali, one of the largest gold mines in Africa, situated in forested northeastern DRC.

Yet, commitments reported to or identified by CDP vary widely from one company to another and are generally not framed and implemented through a robust science-based approach.[186] Types of commitments range from broad goals (e.g. No Net Loss) to very specific avoidance strategies (e.g. not to explore or develop mines in World Heritage sites) **(Figure 6)**. Most of them lack clear definitions, targets, or implementation procedures, which impairs any assessment of the quality of company actions or of the progress companies made in addressing biodiversity and forest impacts. It is, for example, unclear if commitments extend to indirect and cumulative impacts.

These findings align with the findings of the Responsible Mining Foundation in its Responsible Mining Index (RMI) Report 2020. Of 38 companies assessed, over half had made some commitments to respect World Heritage sites or other protected areas, but less than a third had assigned specific internal responsibility or channeled resources to implement these commitments.[187]

Only 11 percent and 20 percent of CDP-assessed companies made ambitious 'No Net Loss' or 'Net Positive Impact' commitments, respectively. If developed appropriately, these concepts have the potential to change corporate practice, contribute to progress towards national and international biodiversity targets, and support positive results

for biodiversity.[186] Only four out of the 45 companies assessed adopted the Specific, Measurable, Achievable, Realistic, and Time-bound (SMART)[n] target addressed at biodiversity impacts.

It remains difficult to determine whether the measures taken by mining companies are sufficient to address their impacts. Companies that do report are often performing poorly in their disclosure to CDP and against GRI's reporting standards.

Out of 225 total companies invited to report on their efforts in 2019 and 2020, only 23 responded to CDP's disclosure request.[o] Companies have been slow to disclose information on their efforts and impact on forests or sustainability concerns. CDP's new questionnaire for metals and mining, and coal companies focuses on forests and biodiversity, asking companies to disclose their direct, indirect, and cumulative impacts, while the Global Reporting Initiative 2016 Standard on biodiversity also requires companies to present information on both significant direct and indirect impacts **(Box 10)**.

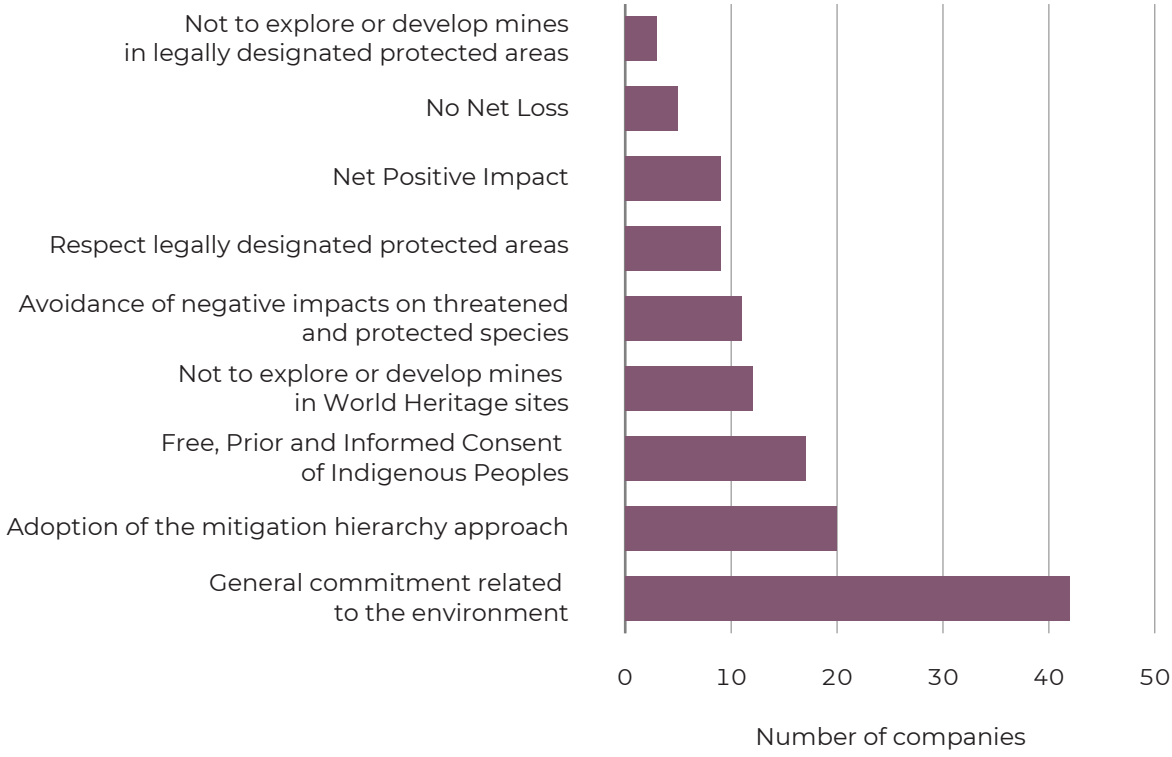
Of the companies assessed by CDP, most cover some biodiversity aspects in their public sustainability reports but, in general, do not report on their dependency on biodiversity and ecosystem services. Companies are also not disclosing information on their priority sites for biodiversity conservation. While more than 56 percent of the companies assessed reported operations in or close to protected areas, only 38 percent provide comprehensive information related to protected areas or internationally recognized areas of high conservation value. Identifying sites of conservation importance and clearly disclosing detailed information on such aspects, including ecosystem-specific information, could help companies focus their biodiversity action plans and any biodiversity-related business interventions, and showcase actions taken to their stakeholder.

This lack of transparency implies both a lack of ambition and a lack progress to address biodiversity goals (including forest goals). Thus far, company-level pledges have not been effectively translated into the project level, where the bulk of an operation's environmental impacts needs to be considered.[188] Since most companies do not disclose information on addressing biodiversity (and forest) goals in their policies and planning, it is likely that they do not have significant progress to report. Confirming this assumption, a World Bank analysis of 29 mine sites found no indication that ambitious commitments lead to better practices and reduced forest impact. On the contrary, several of the strong commitments assessed by the study were paired with poor practices on the ground.[39]

n This framework is recommended by the Subsidiary Body for Scientific, Technical, and Technological Advice of the Convention on Biological Diversity as presented in CBD (2010) and is defined as specific *(target element sets out clear and well-defined objectives)*, measurable *(quantitative indicators available)*, ambitious *(target goes beyond business as usual and aims sufficiently high to achieve the overall objective of halting biodiversity loss)*, realistic *(can practically be achieved within time and given resources)*, and time bound.

o Disclosures included in analysis were as of September 4, 2020. Companies had until September 30 to disclose for the 2020 cycle.

Figure 6. Number of companies that made commitments related to biodiversity



Note: A total of 45 mining companies were assessed; 23 companies self-reported and disclosed data through CDP in 2019 and/or 2020, while 22 companies were assessed based on data from corporate sustainability reports.

Source: CDP analysis of self-reported and disclosed mining company data in 2019 and 2020 as well as corporate sustainability reports published mostly from 2017–2019 (one report from 2013)

5.2 Are companies managing forest impacts from mining or infrastructure following the mitigation hierarchy?

While many companies in the mining sector have a policy covering biodiversity or general environmental aspects, we lack insight into the specific processes and practices used for their implementation.

The majority of companies (78 percent) assessed by CDP have a documented, accessible biodiversity-related policy to manage impacts from their operations (**Figure 7**). While some policies just reiterate commitments to good practices and broad goals (e.g. transparency), others provide more detail to their high-level goals, defining milestones, specific targets, or international standards. Most policies do not refer explicitly to company targets, commitments, or implementation mechanisms or procedures. Similarly, a 2020 report found that very few mining companies provided evidence of implementing biodiversity management procedures across their operations.[187] This lack of information makes it difficult to determine how and whether companies are making progress.

Thirty-eight percent of companies assessed by CDP disclosed biodiversity offsetting projects. However, detailed information on the exact objectives/goals of the offsets is scarce. While some projects mention targeting the conservation of priority species, only four projects from the sustainability reports are specifically aimed at conserving forest ecosystems. The insufficiency in the information disclosed by companies makes it difficult to measure progress towards offsetting targets.

Figure 7. Number of companies referring to specific types of biodiversity policies

Note: A total of 45 mining companies were assessed; 23 companies self-reported and disclosed data through CDP in 2019 and/or 2020, while 22 companies were assessed based on data from corporate sustainability reports.

Source: CDP analysis of self-reported and disclosed mining company data in 2019 and 2020 as well as corporate sustainability reports published mostly from 2017–2019 (one report from 2013)

In practice, progress in aligning operations with the mitigation hierarchy and addressing direct as well as indirect impacts has been very limited.

Through an analysis of 29 case study sites of large-scale mining in forests, a recent World Bank report[39] could not find an example of a single operation that comprehensively addressed and mitigated forest risks of mining. There are, however, good practice examples of *specific steps* of the mitigation hierarchy across mining sites, where companies attempt to target their direct impacts. For instance, the report found that exemplary operations carried out appropriate ESIAs and timely stakeholder consultations, allowing for plans to be responsive to findings. Similarly, many mine site operators work to minimize their impacts, such as through reducing the impact on nearby vegetation. In contrast, good practice examples addressing indirect impacts are rare. Although indirect impacts can be much more extensive, available evidence on company efforts in the mining and forestry sectors indicates that most are focused exclusively on direct impacts of their actions.

Many different voluntary sustainability initiatives have emerged to guide the extractives industry in efforts to address biodiversity concerns. Nearly all of the companies assessed by CDP refer to international standards and widely recognized biodiversity-related initiatives for their policies.

Nearly all (95 percent) of the companies assessed by CDP indicated participation in or supporting industry-led and/or standards-setting initiatives and organizations promoting sustainability in the mining sector. The most popular initiatives are The International Council on Mining and Metals (ICMM) and Towards Sustainable Mining (TSM), which were taken up by 16 percent and 15 percent of the companies respectively; and the Responsible

Jewellery Council (seven percent) and Aluminium Stewardship Initiative (four percent). Just under a third of companies (29 percent) are also participating in the United Nations Global Compact. We were, however, unable to find information on the larger market uptake of these standards.

The number of voluntary sustainability initiatives has increased rapidly in recent years, amounting to 124 different initiatives in 2017.[189] This is a concern for different stakeholders, given the difficulty and cost of keeping track.

Our review of mining certification standards shows that in terms of the guidelines, tools and definitions, the sector made some progress in addressing biodiversity impacts. Uptake has, compared to broader sustainability initiatives, been slow. The lack of common definitions makes it difficult to assess the quality of these standards; for example, in covering indirect impacts.

Accounting for the level of the standard's content and the level of obligation in its application generally, an IISD analysis clearly highlighted the Initiative for Responsible Mining Assurance (IRMA) Standard for Responsible Mining as a top performer; other well-performing large-scale mining standards are those created by the Aluminium Stewardship Initiative, the Responsible Jewelry Council (RJC), and the International Finance Corporation (IFC) **(see Box 10)**.[189]

Only the IRMA's Standard for Responsible Mining provides detailed guidance and certification for mining operations and explicitly calls for the identification of direct, indirect, and cumulative effects on biodiversity and ecosystem services. The adoption of IRMA's standard has, however, been slow and likely requires additional pressure from investors or consumer companies. As of October 2020, only five mines are registered on the Responsible Mining Map, which means that they have initiated the process. Similarly, two other standards of practice from the IFC and RJC mention indirect impacts resulting from mining activities.

Although standards often refer to "indirect impacts", the term itself is generally not clearly defined, and hence can reflect different meanings. In this report, indirect effects of infrastructure, mining, and energy projects on forests are understood in the context of a "pull effect": the establishment of these industries in remote and previously undisturbed areas attracts populations and new settlements, which then use forest resources for subsistence or other economic activities. These impacts far outweigh the direct impacts. In contrast, mining standards may use the term differently; for instance, to present impacts occurring in a different location (e.g. a mining operation may exert an "indirect" impact on a local community situated downriver from the operation).

BOX 10. Example mining sector standards and their forest relevance

Standards of practice

In May 2020, IRMA released its list of "Critical Requirements" that mining sites must meet to achieve so-called "IRMA 50" and "IRMA 75" certified levels,[190] providing a stepwise onboarding process for companies. Under the critical requirements, companies need to conduct social and environmental impact assessments that cover 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 IPLCs and remedies for past impacts.[191] In addition to IRMA's standards, material-specific standards and certifications target downstream companies to promote good mining practice, e.g. the Responsible Steel Standard targets the steel industry while being aligned with IRMA.

IFC's Sustainability Framework presents eight different Performance Standards—covering social, environmental, health, and other aspects—that the user has to meet throughout the life cycle of the investment. Although they allow for some flexibility in the application of some of its requirements, overall, certificate holders are expected to meet all the specified requirements in order to participate in the initiative.[192] Its Performance Standard 6 states that the project's impacts should consider direct and *indirect* project-related impacts on biodiversity and ecosystem services. In the context of biodiversity threats and impacts to ecosystem services, the process stresses that special focus should rest on habitat loss; degradation and fragmentation; invasive alien species; overexploitation; hydrological changes; nutrient loading; and pollution. This is an example of where the indirect impact definition likely deviates from the important concept highlighted in this report **(Chapter 2)**.

The Responsible Jewelry Council's code of practices provides a standard for responsible business practices along the whole supply chain, from mine to retail, building on/using international standards (e.g. IFC's performance standards), which include the mitigation hierarchy. The code applies to gold, silver, PGM, diamond, and colored gemstones, and requires mandatory third-party auditing. Regarding its impact assessments, the standard states that it 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." Similar to the IFC standard, indirect impacts are not defined, yet are unlikely to consider the settlement of populations and their use of forest resources.

Standards for reporting and disclosure

CDP Forests expanded its scope in 2019 to include new sector-specific questions for metals and mining, and coal companies, sectors previously only targeted by CDP's climate change and water security disclosures. The objective of this expansion is to address the current lack of comprehensive, structured, and comparable data to measure the impacts of the metals and mining, and coal sectors by defining clear criteria and indicators specifically intended to measure relevant impacts and progress for the NYDF Progress Assessment. These questions are intended to provide a comprehensive framework to capture information on how companies in these sectors are managing their impacts and risks, as well as realizing opportunities related to forests and biodiversity. Companies are requested to disclose direct, indirect, and cumulative impacts of their operations on biodiversity. The second disclosure cycle for the CDP Forests' metals and mining, and coal questionnaire ended in August 2020.

The Global Reporting Initiative's (GRI) guidelines have served as a starting point for numerous companies' corporate social responsibility, and environmental, social, and governance reporting. GRI guidelines present a disclosure-specific document for mining and metals.[193] A new draft of GRI's Sector Standard on oil, gas, and coal acknowledges that "increased human settlement around operational sites can have indirect impacts, such as stress on ecologically sensitive areas and newly opened routes to previously inaccessible areas." It also refers to the importance of the mitigation hierarchy.[194]

Sustainability standards for the infrastructure sector have raised awareness of environmental and social pitfalls of poorly designed projects. However, uptake of these standards is minimal compared to the global scale of infrastructure development.

While sustainability ratings are relatively well-known and widely applied in building design and construction, the infrastructure sector has been a relative laggard.[195,196] One barrier to widescale adoption has been the fragmented proliferation of standards: well over 30 sustainability rating labels have been developed, many of them only applied to one country or region.[197] Some widely recognized initiatives cluster in North America and Australia, including Greenroads, Envision, and Infrastructure Sustainability. Comparability across these standards is limited, and few existing tools are designed to be applied in a project's planning phase, as opposed to its construction or operational phases.[198] Project assessment methods used in the infrastructure sector—ranging from sustainability standards to more standard tools like ESIAs, life cycle assessments, and cost-benefit analyses—vary widely in their scope and if they account for indirect or cumulative impacts.[199]

Examples of infrastructure sustainability standards that have gained traction include SuRE® (Standard for Sustainable and Resilient Infrastructure), which shows strong alignment with international frameworks and other relevant principles such as the Equator Principles; and CEEQUAL (Civil Engineering Environmental Quality Assessment and Awards Scheme), a leading sustainability assessment since 2003 **(Box 11)**. While the emergence of these standards and guiding principles is encouraging and signals a shift towards sustainability in the infrastructure development sector, their uptake has been limited compared to the total scale of infrastructure investment.[200,201] Conversely, the IFC's Sustainability Framework integration in the Equator Principles, at least in countries who are not members of the Organisation for Economic Co-operation and Development (OECD), may have been key to rendering such standards more relevant, motivating further adoption.

BOX 11. Examples of standards for the infrastructure sector

CEEQUAL (Civil Engineering Environmental Quality Assessment and Awards Scheme) is a sustainability assessment launched in 2003 by the Institution of Civil Engineers and acquired by the Building Research Establishment in 2015. CEEQUAL provides assessment for all types of civil engineering, infrastructure, landscaping, and public realm projects and contracts. CEEQUAL aims to create an industry environment of sustainability awareness in decision-making, project-planning, and implementation.[202] By the end of 2016, CEEQUAL had been used to certify more than 360 projects with a further 250 registered for certification.[195]

SuRE® (Standard for Sustainable and Resilient Infrastructure), a standard launched by the Global Infrastructure Basel Foundation, encourages best practices aligned with relevant international frameworks, such as the UN Framework Convention on Climate Change and the Convention on Biodiversity, and aims to mainstream SDGs in infrastructure. All projects under SuRE® should minimize negative environmental direct and indirect impacts through construction and operation phases; other requirements are staged according to increasingly stringent performance levels. At Performance Level 1, projects comply with other standards such as the IFC, while no more than 25 percent of the project site is newly cleared land, while Performance Level 2 indicates 'No Net Loss' through minimizing and offsetting impacts. Projects at Performance Level 3 avoid negative impacts overall. So far, uptake of SuRE® standards have been limited: it is currently running its initial implementation phase with projects in China, India, and Indonesia, and Malaysia is undergoing certification assessment.[203]

5.3 Are companies in the agriculture and mining sectors promoting sustainable alternatives to basic needs deforestation linked to their impacts by applying the PRIME framework?

Supply-chain companies in the cocoa and palm oil sectors have initiated a broad range of initiatives to address the sustainability issues of smallholders in their supply chains. However, efforts remain limited in scope, and engagement programs still fail to reach smallholders at scale.

In the cocoa sector, companies focus support mostly on their supplying farmers and specific priority regions while many smallholders still remain unsupported. In the past two years, the 35 companies that form the Cocoa and Forest Initiative (CFI) reported technical training to approximately 943,000 cocoa farmers in Côte d'Ivoire and Ghana. 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.[204,205]

In the palm oil sector, about 19 percent of smallholders in the major producer countries of Indonesia and Malaysia receive support from companies.[206] This support is, however, limited to smallholders who are contracted within company schemes and in whom companies invest to ensure the security and quality of their supply. Independent smallholders in Indonesia, who cultivate more than 2.5 million hectares of palm oil plantations, are largely outside of company support programs. Most of these smallholders have little knowledge of good practices and have lower yields compared to scheme smallholders and large plantations, and tend to expand their plantations through conversion of peatland and forests.[58,207]

The majority of smallholder support programs seek to increase farmers' productivity but cannot address underlying structural vulnerabilities and system of incentives that make farmers more likely to engage in forest clearing.

Without collaboration from governments and civil society, companies cannot, and should not be expected to, provide support and enabling conditions that address all PRIME dimensions. In West Africa, for example, even for those cocoa farmers that were reached by support programs, impacts on forests remains unclear. The full suite of conditions to ensure sustainable forest use were not in place.[156]

With support focused on productivity, there are risks of a rebound effect for deforestation as profitability increases. Although not representative of all farmers in the respective countries, a recent survey commissioned for the NYDF Assessment showed that 80.2 and 69.8 percent of farmers in Ghana and Côte d'Ivoire, respectively, disclose farm expansion as their top investment priority—despite a large share of them already benefiting from different types of support.[156] This finding points to the need for additional incentives to adopt sustainable practices while disincentivizing forest expansion as a strategy to increase incomes.

Collective efforts that engage companies and governments in mutually beneficial collaboration offer a promising way forward aligned with several PRIME dimensions.

As part of the CFI, 35 companies who together account for 85 percent of the world's cocoa trade have begun to coordinate with the governments of Ghana and Côte d'Ivoire to align and scale the impact of their interventions to improve smallholder productivity at the landscape scale. Civil society groups are working to support this public-private collaboration to develop landscape level planning and governance arrangements.[208]

The main advancement of the CFI is that companies work collaboratively with governments to reform governance structures and build institutions that enable farmers to adopt sustainable land use practices, including tenure reform and building local capacity for technical assistance.[204,206] Although the CFI can potentially play an important role in

harmonizing programs to ensure full sourcing areas are covered by effective programs, so far, progress is limited. Currently, programs are still largely implemented in a patchwork of trainings, support packages, and limited credit that fail to cover smallholders across the entire sector. In addition, unless profound issues are addressed, such as poverty and the unequitable distribution of value in the supply chain, effectiveness of such engagements may be short-lived.

On a smaller scale, individual companies seeking to take responsibility for the wellbeing of communities impacted by their operations have also taken steps to support interventions, often in collaboration with governments and civil society. In the mining sector, these initiatives typically revolve around improving transparency and participation in decision-making regarding how benefits for local communities are shared. A case study **(Box 12)** in Brazil demonstrates how a government policy that favors the strategic use of company resources to implement sustainable development initiatives in local communities near mine sites has resulted in improved community empowerment and welfare while contributing to biodiversity conservation.

BOX 12. Case study: Multi-stakeholder partnerships for sustainable territorial management

The Amazon rainforest hosts about a quarter of Brazil's mining activities, a sector that contributes about seven percent of the country's GDP.[209,210] To help compensate for the social, economic, and environmental impacts of mineral resource extraction, Brazilian law requires that royalties and taxes be paid to the Federal District, state, and municipality where mining takes place.[211] Municipalities receive 65 percent of these payments under the Financial Compensation for the Exploration of Mineral Resources, with the intention that they will reinvest these resources to benefit local communities. Compensation funds may be used to implement infrastructure projects that support local economies, to support environmental conservation activities, and to increase access to health and education. Some mining companies are taking action to support local communities in taking ownership of how these royalties should be spent, via transparent, efficient, and democratic processes. One such company, *Mineração Rio do Norte*, has been supporting the development of a participatory and transparent financial mechanism through the Sustainable Territorial Program (Programa Territorios Sustentaveis) since 2015—one which aims to contribute to community wellbeing through community empowerment and the adoption of sustainable land use activities.[212]

The Sustainable Territorial Program an innovative fifteen-year public-private regional program implemented by the U.S. Agency for International Development, the Bioversity-CIAT Alliance, and the Avina Foundation. Among the various development pathways being implemented, the program features the creation of a community-led fund (so-called Quilombola Fund). Currently in its pilot phase, the participatory territorial management model redirects a portion of compensation payments to initiatives decided upon autonomously by the communities themselves. The program's long-term vision is to provide a foundation for the communities to become self-sufficient and to continue thriving after the mining exploration ends. For this purpose, the program and community fund are planning and implementing activities that will strengthen livelihoods and value chains, land tenure and local governance structures, infrastructure and social services, as well as territorial and natural resource management, among others, thus providing a comprehensive intervention that incorporates all PRIME dimensions.

In the mining sector, the majority of companies assessed by CDP whose mine sites overlap with ASM operations engage with small-scale miners. Rather than by forest goals, collaboration is motivated either by managing operational risk or by conducting due diligence to source from ASM suppliers.

Since ASM operations within or close to large-scale mine sites present operational and reputational risks, mining companies have long sought to minimize conflict with small-scale miners.[213,214] Increasingly, sector best practice standards are calling for mining companies to engage with small-scale miners and support the improvement and professionalization of the ASM sector, including the adoption of best environmental practices.[215] However, most corporate ASM engagement does not explicitly link to forests.

In their assessment, CDP found that 60 percent of mining companies who reported on ASM activities near their operations also reported engagement with these groups or communities, but with no explicit links to forest concerns. One company in Peru, for example, engages in a partnership with the government and host communities that enables artisanal mining to take place legitimately. Through a government-approved artisanal mining formalization process, the mine helps the ASM community access credit and markets as well as provide safer working conditions. The rest of companies near ASM activities, however, indicated that they do not engage with ASM groups or communities due to the illegality of their activities.

Numerous standard-specific examples exist that provide companies with the necessary guidance to successfully engage with ASM and local communities, while also addressing environmental risks **(Box 13)**. Most companies lack insight in the extent to which biodiversity or forest risks even play a role. Only one company included a statement on ASM engagement in their biodiversity-related policy.

BOX 13. Important mining sector standards and their relevance for ASM engagement

Numerous initiatives aim to address how artisanal and small-scale mining (ASM) actors are engaged by large-scale mining and downstream supply chain companies, including the GRI, the Responsible Mining Index, International Council on Mining and Metals, the Responsible Minerals Initiative, the Responsible Steel Standard, Copper Mark, the World Gold Council, De Beers, or the Organisation for Economic Co-operation and Development.[215] Below, the ASM approaches of top three standards for overall performance, as identified in Section 5.2, are described.

The Initiative for Responsible Mining Assurance (IRMA) principles for social responsibility state that "operating companies [should] … where possible within the scope of national law, foster positive relationships between large-scale mines and ASM entities, and support the development of ASM that provides positive livelihood opportunities and is protective of human rights, health, safety, and the environment." The guidelines recommend steps for companies to reach these outcomes, including due diligence in assessing environmental and social risks when establishing commercial relationships. Other requirements include involving small-scale miners in community benefit and mine closure planning.

The Responsible Jewellery Council's Code of Practices requires mining companies to engage directly and maintain a continuous dialogue with the ASM community as part of stakeholder engagement, environmental and social impact assessments, and risk management. Moreover, companies are directed to participate in initiatives that enable the professionalization, formalization, and certification of ASM, as appropriate. Finally, specific requirements for sourcing from ASM are outlined.

In contrast to the two previous standards, the International Finance Corporation's Performance Standards do not provide specific requirements for ASM. Instead, the standards refer more generally to engagement with local affected communities. For example, Performance Standard 1 directs companies to "ensure that grievances from Affected Communities and external communications from other stakeholders are responded to and managed appropriately," including through application of the mitigation hierarchy; and to "promote and provide means for the adequate engagement with Affected Communities throughout the project cycle … and to ensure that relevant environmental and social information is disclosed and disseminated."[192]

Certification for ASM producers is extremely limited and does not reach the most vulnerable actors. Existing certification schemes do not require deforestation-free production.

As in the agriculture sector, downstream and consumer-facing companies who source metals and minerals may rely on certification of ASM producers to ensure their supply was mined according to certain environmental and social standards. The most widely adopted third-party verified ASM certification schemes are Fairtrade International's Fairtrade Standard and the Alliance for Responsible Mining's Fairmined Standard.[216] Both standards require ASM operators to ecologically restore mined areas, and to reduce or eliminate the use of mercury, while Fairtrade additionally requires operators to conduct third party-approved environmental impact assessments.[216]

On both the demand and producer sides, the reach of both programs remains quite limited. Uptake of the Fairmined Gold certification has grown steadily, if slowly, from 136 jewelry wholesalers and retailers participating in 2017 to 196 in spring 2019. Over the same period, Fairtrade Gold dropped from 136 participants to 60. Few artisanal miners are certified to meet even this limited demand: less than 0.01 percent (one in 10,000) of ASM operations are certified across Latin America, Africa, and Asia.[216] Because only legal and formalized ASM organizations are eligible for certification, and due to the stringency of the requirements, only a limited proportion of ASM actors has the capacity to participate.[62]

CHAPTER 6.

Grassroots movements

Grassroots actors are those who typically do not sit within the halls of power. They are the ordinary citizens who form the base of society, going about their daily lives until they are united in common cause or threat to their livelihoods.[217] The powerless have long turned to grassroots resistance and built popular movements to make their voices heard. Within the context of infrastructure and extractive developments, grassroots actors seek to influence how, where, or if projects are undertaken and to exert local communities' rights to self-determination. They also strive to attain the means and recognition they need to pursue traditional and sustainable livelihoods.

The long-term success of community efforts to influence extractive and infrastructure projects is difficult to assess. This gap is in part due to a lack of comprehensive data on, for example, the outcomes of legal actions brought by communities, or the extent to which policymakers take these stakeholders' views into account. Grassroots actors' influence is often exerted through indirect channels, which are hard to fully trace. Similarly, progress and success in improving their livelihoods is contingent on a range of factors that limit efforts to measure and compare efforts across different landscapes.

However, grassroots actors themselves are generating awareness and knowledge of their efforts through high-profile public events, statements, and campaigns. We present some of these awareness initiatives in this chapter, complemented by literature review and case studies of local actors' endeavors through the court system, in international forums, and in their own territories.

In this chapter, we briefly describe the expansive work of Indigenous peoples and local communities (IPLCs), landless peasants and smallholder farmers, local NGOs, and allied civil society groups to shift patterns of development. First, we discuss the tools and processes of efforts to influence, and civil resistance to, development projects. In the second half of the chapter, we describe progress in implementing alternative livelihood models through community forest management.

The growing demand for natural resources globally and the corresponding infrastructure and extractive development in forest lands continues to be met with social resistance and opposition. IPLCs and civil society actors fight for their voices to be heard and to influence decisions related to their territories and rights to forest natural resources.

Citizens and civil society have long resisted certain large-scale development and extractive activities over the environmental, social, and human rights impact of these projects, advocating instead for projects that are more responsive to their needs. Such collective efforts are led by and include IPLCs, environmental defenders, civil society, and academics. Many are centered around the needs of IPLCs and the protection of their cultural identities, spiritual norms, and ways of living tied to ancestral territories. Communities seek their rightful participation in development planning through decision-making processes that value and incorporate their traditional institutions of governance and allow them the power to influence those decisions. Effective consultation processes enable communities to give their free, prior, and informed consent (FPIC) or dissent without fear of reprisal and ensure the fair distribution of benefits from development. Other grassroots movements promote development models that completely depart from the mainstream status quo.[218]

More broadly, IPLCs and grassroots movements tend to organize around and advocate for:

- Territorial self-governance and the right to cultural preservation and self-determination. This means having their rights to land recognized, respected, and enforced and the appropriate legal status that guarantees and protects this.
- The right to utilize resources on IPLC territories according to their understanding of sustainability tied to Indigenous, traditional, and local knowledge. Some IPLC groups also seek to mainstream such approaches to forest management and protection into dominant policies and institutions that govern forests.[219]
- Recognition of collective rights to their Indigenous traditional livelihoods that are negatively altered and impacted by investments, leaving them more vulnerable.
- A shift in dominant paradigms that incorporate Indigenous perspectives and values into legal frameworks and broader national economic development plans. IPLCs' complex views on and practices of forest management can supplement existing approaches in order to not exceed ecological limits.

6.1 Are grassroots movements influencing infrastructure and extractive industry planning and development to mitigate forest impacts?

IPLC and grassroots movements have mobilized to gain access to and influence planning to protect forest lands from harmful development. In some cases, they have successfully cancelled or delayed large-scale infrastructure projects.

Grassroots movements and resistance have played an important role in informing policy on land use, influencing public opinion, and placing impacts of large-scale development projects on the public agenda. IPLCs, activists, lawyers, and scholars have made concerted efforts to push governments to adopt requirements for consultation and FPIC as well as demanding that these processes be robust and inclusive, rather than perfunctory and silencing.[220,221] Civil-society organizations and grassroots NGOs have been important in supporting such efforts. In Brazil, local NGO support has been crucial in the struggle of the country's traditional communities for their territorial rights, including rights to practice their traditional livelihoods through the communal management of natural resources.[222]

When communities' rights to consultation and FPIC are not respected, bottom-up community consultations have been organized to mobilize communities and reverse or disrupt these projects. Formal petitions, public campaigns, street protests and strikes, and collective action networks are some of the methods actors use.[223,224] In the Amazon, social

movements have brought together smallholders, IPLCs, and national and international NGOs to successfully delay large-scale infrastructure development in critical forests, such as the suspension of the São Luiz do Tapajós dam in Brazil[225] and the creation of a 26 million-hectare protected forest corridor in Brazil's Xingu Basin between 2004 and 2008.[226]

IPLCs and civil society groups have long utilized the courts as a tool for contesting development projects that threaten important ecosystems. One strategy involves filing lawsuits to enforce FPIC requirements.[227] Belize's Supreme Court cited FPIC requirements for Mayan communities in its 2007 order to cease the granting of extraction and hydroelectric permits.[228] When a mega hydroelectric project in Costa Rica advanced without fulfilling FPIC requirements, the United Nations Special Rapporteur for Indigenous Rights weighed in, naming FPIC as essential.[229] In 2016, the Supreme Court annulled the authorization for the project.[230] In Peru, a court determined in 2017 that Indigenous lands occupied by IPLCs in voluntary isolation must be excluded from an oil exploration project.[231] And in May 2019, the Waorani Indigenous community won a lawsuit contesting the flawed consultation process when the Ecuadorian government put their territory in the southern Amazon up for sale in an oil auction in 2012.[232]

Grassroots and IPLC movements have been tackling power inequities by building international alliances to put pressure on actors and to raise awareness on cross-country impacts of harmful development. While leveraging international support has brought some issues into the spotlight, there has been limited progress in incorporating Indigenous worldviews into policy.

To strengthen their movements, IPLCs and grassroots activists have been establishing transnational alliances. International activism targeted at governments and donors makes these movements visible and difficult to ignore.[233]

Regional alliances across the Americas include the Coordinadora de las Organizaciones Indígenas de la Cuenca Amazonica (Coordinating Body for the Indigenous Peoples' Organizations of the Amazon Basin, COICA), an Indigenous Alliance coordinating regional efforts in the Amazon Basin to promote and protect Indigenous peoples' territories, ways of life and social, spiritual and cultural values. In the Congo Basin, the Conference on Dense and Humid Forests Ecosystems of Central Africa was created in 1996 to improve the participation of civil societies. One of its grassroots members is the network of Indigenous and Local Communities for the Sustainable Management of Forest Ecosystems in Central Africa, which aims to enhance IPLC engagement in forest management. In Kenya, a grassroots campaign leveraged local and foreign social organizations and environmental groups to successfully delay a coal-plant project near the UNESCO-World Heritage site, Lamu, on the Kenyan coast.[234] Such alliances have had a major impact in uniting and amplifying IPLCs' voices, especially in response to governments' promises of the resulting benefits from planned development activities **(Table 3)**.

TABLE 3. Statements on proposed infrastructure and extractive projects from Indigenous peoples and local communities and government leaders

INDONESIA

"AMAN urges the President to revoke this regulation[p] that legalizes land-grabbing of IPLC territories in the name of national strategic development and creates conflict and poverty for IPLCs affected. Indigenous peoples. Development models must be based on and utilized for the greatest prosperity of the people, as mandated in the constitution and the goals of the state. [AMAN also] urges the president and parliament to pass the RUU Masyarakat Adat bill that provides the recognition, protection and fulfillment of rights of Indigenous peoples as a whole."[235]

—Indigenous Peoples Alliance of the Archipelago (AMAN)

"Don't dream that we can compete with other countries and win the competition if our infrastructure is still lagging behind."
"We have to work hard and catch up [with other countries]. We have to speed up this [infrastructure] development."[236]

—President Joko Widodo

BRAZIL

"We do not accept gold digging, mining, agribusiness and leasing of our lands, we do not accept loggers, illegal fishermen, hydroelectric plants and other projects, such as the Ferrogrão, that will impact us in a direct and irreversible way [...] If the forest disappears, our cultures will also disappear ... our languages will disappear. We need to fight for the preservation of our land; we need to unite our forces."[237]

—Statement from a Meeting of the Mebengokre Peoples and Brazilian Indigenous leaders[q]

"[Indigenous peoples] don't want to live as though they are confined, like prehistoric beings [...] They want to be integrated into society, they want electricity, they want to be who we are [...] Indigenous people don't lobby, don't speak our language, and yet today they manage to have 14 percent of our national territory [...] One of their intentions is to hold us back."[238]

—Brazilian President Jair Bolsonaro

"When environmentalists get involved, the debate becomes very ideological and very little technical [...] We will carry out the consultations demanded by the International Labour Organisation (ILO), but only after the contract [with the engineering companies] has been signed. If you consult them [communities] earlier, you create all kind of expectations."[239]

—Bolsonaro administration's Minister of Infrastructure, Tarcisio Freitas

GHANA

"The Atewa Forest Reserve defines our livelihood. So, if anything should happen to the forest, the rainfall pattern will change and our livelihood also change. It will affect everybody living along the line and it is therefore important that the forest is reserved [...] Nobody is saying that bauxite mining is not good or it won't give employment or it won't give Ghana government money, but we believe that whatever we will get out of bauxite mining as at today, we equally beg that if we do the alternative, we will get several times what we will get and that will help Ghana today and Ghana tomorrow."[240]

—Emmanuel Tabi, local assembly representative

"Beginning now, the full-scale exploitation of Ghanaian bauxite resources will commence. I am satisfied by what I have been told and what has been demonstrated to me that it is possible for us to get that red matter out without disturbing the wildlife that there is in the Atewa mountains."[240]

—Ghanaian President Nana Addo Dankwa Akufo-Addo

p In May 2020, the President Joko Widodo passed a regulation that expands the type of land that can be unilaterally acquired by state government. This includes forests, villages, and customary lands.

q A historic gathering among Indigenous leaders, in which the Piaraçu Manifesto was produced, denouncing the Brazilian government for putting Indigenous people at risk.

International alliances are particularly important as movements are increasingly facing threats and restrictions to their activities and funding sources through state tactics, ranging from bureaucratic hurdles to restrictions on foreign funding to killings of environmental defenders.[241,242] Throughout central Africa, civil society space is largely closed, while many Amazon and Southeast Asian countries face repressed environments for citizen activities.[243] The June 2020 National Pandemic Act in Papua New Guinea, for example, included provisions that may restrict rights to freedom of expression and freedom of assembly, which analysts fear may undercut ongoing community protests against an Australian and China-backed gold and copper mine along the Sepik river.[244]

International alliances have been leveraged by IPLCs to raise awareness for specific threats from mining activities to their territories and health. The International Articulation of People Affected by Vale (AV) is a transnational, South-South network of civil society actors that establishes strategies against social and environmental impacts of the mining industry, specifically those caused by the Brazilian transnational company, Vale S.A.[245,246] Since the outbreak of COVID-19, Indigenous communities in the Brazilian Amazon have launched the "#MinersOutCovidOut" campaign, seeking 200,000 signatures from the Brazilian public and global community to pressure Brazilian authorities to remove illegal miners from their territory.[247] The presence of illegal mining activities less than five kilometers away from communities has led to the spread of the virus among Indigenous community members. Forty percent of the Indigenous population is expected to be infected by COVID-19 if nothing is done to stop transmission.[248,249]

While traditional and Indigenous knowledge is formally recognized in international agendas,[250] there is cursory progress in the incorporation and implementation of Indigenous worldviews such as *buen vivir* in downstream policies. A delegation of representatives from IPLCs in Latin America, Asia, and Africa travelled to the 23rd UNFCCC Conference of the Parties (COP 23), calling for the recognition of IPLCs' territorial rights, access to climate finance, and the incorporation of Indigenous knowledge in climate change mitigation strategies.[251] The Indigenous + Community Response to the IPCC Special Report on Climate Change and Land in 2019 underscores the role Indigenous, traditional, and local knowledge systems have played in biodiversity conservation, and advocate for partnerships that allow this knowledge and practical experiences with land and forest management to inform efforts to combat climate change.[252]

IPLC-led legal victories have helped promote alternative conceptions of rights of nature in certain legal frameworks, but implementation of these rights through specific policy is limited, and redress through the courts has often been slow.

Building on Indigenous worldviews of nature as a living being with inalienable rights, legal paradigms are being intentionally shifted in a number of countries to recognize the right of nature to be protected and preserved.[253] Ecuador was the world's first country to include "Rights of Nature" in its institution in 2008,[254] as a tool for envisioning a new kind of sustainable development. IPLCs have leveraged this in legal battles. In October 2018, the Cofán community of Sinnagoe won their lawsuit to cancel mining concessions in their territory because community consultations were never conducted. The court also reaffirmed the community's rights to water, a healthy environment, and the right of nature.[255] Only a year after Ecuador made such constitutional changes, Bolivia's constitution included environmental rights as part of its constitution, driven by IPLC and civil society movements against the neoliberal model of development pursued in Bolivia at the time.[256] Nevertheless, these commitments have not always been reflected in policy or action; for example, neither Ecuador nor Bolivia have adopted FPIC requirements in national law (requiring only *consultation* instead).[43] In Ecuador, the government opened up Yasuni National Park to oil drilling.[257]

While legal proceedings can be a powerful channel to seek redress for harms, they can take a long time.[258,259] Companies have also been employing strategies to avoid environmental litigation. In Ecuador and Brazil, companies have extended the process through filing

complaints or appealing decisions.[259,260] An oil giant filed a countersuit against state officials in Ecuador who won a judgement against the company for polluting the Amazon rainforest in Ecuador.[261] In Indonesia and Guatemala, despite IPLCs winning lawsuits, the follow-up implementation has been troublesome.[262,263] In Guatemala, the sued company claimed that consultations had been conducted, and agreements made, and the projects resumed operation. However, civil society organizations argue that this consultation was inadequate. Another case in Indonesia turned out to be a success for the mining companies who managed to sue the local government for revoking their permits.[264]

In cases where extractive developments proceed, communities are making some progress in gaining access to a share of the economic benefits.

In some cases, despite, or in lieu of local resistance, communities seek to receive some of the economic benefits from mining or extractive activities. They have seen successes: in northern Peru, the local community in Hualgayoc protested a mining project by the company Gold Fields.[265] In response, the company signed an agreement to improve farmers' income and participation. In Ghana, communities that have been displaced by the mining company Newmont Gold Ghana continue to fight for a fair compensation for the loss of their land and livelihoods. Families that were displaced under the company's resettlement plan continue to struggle with lack of electricity and potable water , and exposure to cyanide spills.[266] The company established a community benefit agreement when it began operations, and its program has been heralded as a model for corporate social responsibility. However, affected communities have not been adequately represented as agreements have been made with local elites rather than communities themselves.[267]

Companies, governments, and multilateral institutions have increasingly accepted the idea of community participation in natural resource governance as a way to increase inclusion and legitimacy of extractive projects.[268] Yet much work remains to be done in making these participatory processes truly responsive to community needs rather than being co-opted by elite actors and reinforcing existing power dynamics.[269]

6.2 Are grassroots movements promoting alternative models for sustainable forest management and prosperous livelihoods?

Forest management driven by communities themselves has in some cases enabled increased community self-determination, autonomy, and a less extractive and more sustainable approach to improved livelihoods.

Between 1990 and 2010, the global forest area under community use rights increased by about 7 percent, while state ownership of forests declined.[270] Community forest management (CFM) has proven an effective strategy for building robust livelihoods while reducing deforestation in cases where civil society, governments, and communities themselves have collaborated to ensure that proper enabling conditions are in place **(see Section 4.3)**. NGOs play an influential role in proposing and testing alternative models for community-based resource management and channeling access to funding to support these efforts. A meta-analysis of 81 cases of community-based natural resource management worldwide demonstrates that social and grassroots movements have played an important role in defending community management structures against threats from government decisions or corporate incursions.[271] In addition, social movements have actually led to improvements in how these management structure operate, including increased community autonomy and democratic decision-making, improved utilization of local ecological knowledge, and strengthened institutional capacity.[271]

Grassroots actions have prompted a durable and institutionalized model for sustainable, community-driven forest management in Guatemala's Maya Biosphere Reserve (MBR) **(Box 14)**. Employing a community-concession model, the MBR fulfills most of the

dimensions in the PRIME framework and provides proof of concept for community management at a large scale: communities have improved productivity, have strengthened rights over the land and resources, established local-forest governance and planning institutions, and benefit directly from the ecosystem services of the forest.

BOX 14. Case study: Community forest management in the Maya Biosphere Reserve

The Maya Biosphere Reserve (MBR) extends across the northernmost part of Guatemala's largest and most remote department, Petén, and contributes to the largest contiguous forested area in Latin America north of the Amazon.[272] Originally established as a biodiversity conservation site in the late 1980s by the Guatemalan government, communities rallied against the initial lack of consultation in the area's management.[273] Through negotiation, direct action, and advocacy with donors and environmental groups, these communities succeeded in forcing the government to take seriously their demands for a role in the MBR's management. The resulting compromise, the community forest concession model, grants 25-year contracts to community forest organizations that meet a set of requirements around forestry planning, certification, and reporting.

This initiative reversed the land's historical status as agricultural frontier towards an area governed by the principles of biodiversity conservation paired with sustainable development. Communities in the MBR have reduced deforestation rates—including virtually ending forest fires—and increased local well-being, through individual income and the expansion of community health and education services.[272,274,275] The model encourages active stewardship of forest resources by the concession communities, and contrasts strongly with the development path followed by neighboring regions—characterized by accelerated deforestation rates, corruption, narco-land grabbing, large-scale cattle-ranching, unlicensed airstrips, and illegal roads. An oil concession in one of the Reserve's national parks—originally granted prior to the MBR's establishment—and the attendant infrastructure have facilitated ongoing encroachment of areas meant to be under strict protection.[276,277]

The success of the Association of Forest Communities of Petén (ACOFOP) has made it an important example for other forest-reliant communities across the world, and it actively engages in exchanges and trainings around lessons learned and capacity-building, including with groups in Indonesia and the Amazon.[233] Nevertheless, ACOFOP and its community members still face challenges. The extension of the CFM concessions is dependent on government approval and remains vulnerable to ever-present competing land use objectives and proposals.[278,279] Despite the challenges, and through ACOFOP and in partnership with other global coalitions, these communities continue to advocate for their right to manage the forest for current and future generations of people and ecosystems.

Access to technical knowledge, governance support, and sufficient finance are critical to achieving longevity and sufficient revenues from CFM. As illustrated by a case from Liberia **(Box 15)**, NGO support is often critical to navigating government bureaucracies and staving off company advances as communities seek to establish robust community management systems.

BOX 15. Case study: The GolaMA Community Forest Project in Liberia[280]

In the largest single remaining block of the Upper Guinean forests between Liberia and Sierra Leone, an NGO-led community forestry project seeks to protect the region's biodiversity while advancing local livelihoods. The Society for the Conservation of Nature in Liberia and the Royal Society for the Protection of Birds in the UK have implemented the GolaMA project in collaboration with communities living on the Liberian side of the Greater Gola Landscape.

The GolaMA area is home to both Indigenous and migrant communities, whose traditional livelihoods differ—migrants tend to hunt or mine, while people Indigenous to the area tend to be farmers. Land use planning and decision-making occurs collectively through a general assembly of clan chiefs and leaders of key groups (women and youth, miners and farmers). The population density is relatively low, and so are deforestation rates. However, this is likely to change as competing and lucrative land use pressures increase.

Knowing their conservation goals would not be achieved without making the project economically lucrative for communities, the implementing NGOs designed it with both conservation and livelihood strategies in mind. The project has two complementary objectives: 1) build the communities' capacity to gain community forestry status under Liberia's 2009 Community Rights Law, and 2) support their adoption of forest-friendly livelihoods, such as beekeeping and sustainable logging. The NGOs also provide training and capacity building in community forest governance.

Corruption and conflicts of interest have stymied the recognition of GolaMA communities' rights to the land. By February 2020, GolaMA had completed eight of the nine steps to achieve community forestry status, an achievement which would have been very challenging without external NGO support. Government capacity to effectively administer the forestry law is quite low because institutions are still recovering from years of civil war, allowing logging companies to hijack the law to gain access to forest lands.[281] Reflecting a global pattern, government officials have also been complicit, expediting applications by logging companies while community-driven initiatives such as GolaMA still await approval. Due to pressure from international donors to address this corruption, the government has put a moratorium on granting community forest status.

The more recently passed Land Rights Act in 2018 promises to address the weaknesses of the previous law, asserting the customary rights of communities over forest lands. Under the new law, a self-defined community can get the equivalent of a land deed, whose rights supersede other rights. Acquiring the deed would involve parts of the government that are less influenced by logging interests. However, critics are skeptical of its eventual effectiveness because it does not apply to communities living on land already allotted to commercial interests.[282]

Grassroots movements are fighting for direct access to climate finance in recognition of local communities' successful sustainable management of their territories; as yet, however, proposals have not been taken up by funders.

The Mesoamerican Alliance of Peoples and Forests (AMPB) have proposed an alternative model for climate finance based on recognition of Indigenous peoples as autonomous territorial leaders and managers. Specifically, they are advocating for the creation of a Mesoamerican Territorial Fund that would allow results-based payments to bypass national and state governments and flow directly into the hands of communities who manage the forest.[233]

Direct funding such as that proposed by AMPB would allow communities to strengthen the governance and management structures they have in place, including patrolling territories, monitoring incursions and forest fires, land use and community development planning, and investment in community enterprises. The payments would help to achieve realization of AMPB's members' desire for autonomy and self-governance based on Indigenous worldviews such as *buen vivir*. AMPB has lobbied to strengthen the Mesoamerican Territorial Fund in international climate events as recently as UNFCCC COP 25 in Madrid in 2019.[283]

CHAPTER 7.

Progress by financial institutions and international donors

Through their investment decisions, financial institutions as well as international donors send strong signals to companies and countries. By delivering financial resources, the financial sector acts as an enabler to various activities, knowingly or unknowingly contributing to deforestation and forest degradation. International donors can also strongly influence forest country governments' development priorities and pathways, with long-term and cascading forest impacts.

Recent years have seen the wide adoption among financial institutions of guiding principles for ensuring sustainability of investments. However, apart from certain examples, we lack data on the alignment of investment decisions with these principles. While multilateral development banks have been at the vanguard of developing and applying environmental and social safeguards, these institutions generally lag in their reporting of environmental outcomes from the projects where these safeguards were applied. There is also an overall lack of coherence and alignment within and among donor institutions that impedes the effectiveness of finance, especially where investments aim to alleviate poverty but without sufficient consideration of the supporting environment to reduce deforestation. Finally, financial flows explicitly aligned through national forest planning processes like REDD+ are still largely unrealized, making it too early to assess progress.

The Goal 8 progress assessment provides an analysis of efforts made by financial institutions in addressing deforestation risks. This includes the creation of new funds, networks, tools, and resources. Here, we only highlight the initiatives that are specific to deforestation driven by infrastructure, extractive industries, and agricultural commodities with a clear link to smallholder production and poverty. Company- and civil society-led finance interventions for smallholder farmers are covered in chapter 5.

In this chapter, we review how financial institutions are progressing with safeguards and investment policies that manage forest-risk development projects. We also highlight how collaboration with international public financiers is helping forest countries align their investment plans with forest goals.

7.1 Are the financial sector and international donors applying safeguards to mitigate forest impacts from infrastructure, extractive industries, and interventions to reduce poverty?

Many financial institutions adopt policies to address social and environmental risks from all sectors. For example, 110 financial institutions from 38 different countries have signed the Equator Principles, which requires the application of comprehensive safeguards or laws in project financing.

As of September 2020, 110 financial institutions from 38 different countries have signed the Equator Principles (EP), a framework to assess and manage social and environmental risks for large financial transactions.[r] Signatories commit to implementing the EP in their internal environmental and social policies, procedures and standards for financing projects, and to not provide project finance or loans where clients are unable to comply. Principle 3 calls for financial institutions to require their clients to comply with the IFC's Performance Standards **(see Box 10)**, which sets standards that are widely considered best practice in the finance industry. This requirement does not apply to "designated" countries that are OECD members and on the World Bank High Income list. Instead, clients in these countries are required to comply with host country laws and regulations. The reliance on existing institutions in designated countries is also criticized several of these countries, including the US and Australia, have recently weakened their environmental policies **(see Chapter 4)**. In addition, requirements for FPIC of the latest EP version are considered too weak, while the EPs also do not call for a restriction to financing sectors, such as coal, that have a negative impact on forests and climate.[284]

In a positive sign for progress, according to the EP website, signatories cover the majority of international project finance debt within developed and emerging markets. The public reporting system also indicates that the framework is being applied in sectors relevant to Goal 3, while the scale is unclear. A number of projects in the infrastructure and extractive sectors were financed in forest countries while applying the EPs; for example, a highway project in Colombia and a mining project in Guinea.[285]

There are several similar initiatives to reduce the environmental, social and/or governance risks of finance, such as the Principles for Responsible Investment (PRI), a voluntary and aspirational set of principles that were developed with the objective to contribute to a more sustainable financing sector. As part of this initiative, groups of investors made statements formulating expectations on how clients should address deforestation in the cattle or palm oil supply chains.[s] The statement for cattle, for example, specifically asks for companies to disclose on their risks including the ability to accurately determine the source geography of an input and that area's deforestation risk, land use change, displacement of Indigenous peoples, and land/labor risks. This, in principle, uncovers deforestation risks from indirect suppliers such as breeders of cows, which are often smallholders. A similar initiative in the banking sector, the Principles for Responsible Banking (PRB), seek to align the strategies and practice of banks with the SDGs and the Paris Climate Agreement. Similarly, the Soft Commodities Compact (SCC), a company-led initiative works with the banking industry to help transform commodity supply chains and help banks' company clients to address deforestation risks.

r The Equator Principles apply globally, to all industry sectors and to five financial products: 1) Project Finance Advisory Services, 2) Project Finance, 3) Project-Related Corporate Loans, and 4) Bridge Loans and 5) Project-Related Refinance, and Project-Related Acquisition Finance. For example, the financial products Project Finance Advisory Services need to exceed a total project capital costs of USD 10 million, and Project Finance a total project capital cost of USD 10 million. In the context of this report, the Equator Principles are mostly relevant for extractive industries and infrastructure projects, while less relevant for agriculture commodity investments.

s See investor statements for cattle and palm oil supply chains..

Less is, however, known about the implementation of these commitments. Assessments by NGOs point to weaknesses in these policies' design and implementation.

For the EPs, reports about specific transactions are only available for the last two years and if clients agree to their disclosure, while NGOs found weaknesses or incomplete application of the EPs in individual projects financed by signatory institutions. This disclosure is also not verified by independent third parties.[286] It also fails to provide detailed information about risks and impacts of projects. Similarly, transparency for other initiatives is even more limited. For examples, access to the data portal of the PRI is not publicly available.[287] Since the PRB initiative is fairly new, there is still limited information on implementation, while reporting is also only planned for collective progress. Rather than providing a comprehensive and systematic assessment of progress and lack thereof, the website lists examples, such as "One bank implemented a new sustainable financing framework to enable them to respond to relevant customer demands. This allows the bank to review any new financing opportunities for alignment with its low carbon economy goals."[288]

It is questionable whether these commitments, broadly focused on environmental and social risks, sufficiently address the problem of deforestation, especially in sectors with risks of indirect and cumulative impacts. For the infrastructure and extractive sectors, we have little insight into how financial institutions translate these commitments into formal policies. In the agriculture sector, data from Forest 500 suggest that formal policy adoption does not mirror the large market uptake of initiatives like the EPs or PRI. According to Forest 500, only 14 percent of the largest 150 financial institutions exposed to deforestation risks from agriculture, had a policy prohibiting deforestation for at least one of their commodities.[t] It is also unclear to what extent these efforts reach smallholder producers. Some banks participating in the SCC, for example report on the share of client production or processing that is compliant with certification. But in palm oil, for example, certification still largely fails to reach smallholder production.

New initiatives aim to track progress of sustainability policies by financial institutions but are still in early stages.

A new initiative, the Task Force on Nature-related Financial Disclosures led by Global Canopy, UNDP, the UNEP Finance Initiative, and WWF could potentially fill this gap for nature- and biodiversity-related risks. The objective is to develop a framework for nature-related financial disclosure and redirect flows of finance at scale towards nature-positive activities.[289] The Informal Working Group for the Task Force, composed of 62 financial institutions and private firms, governments, and regulatory bodies, as well as think-tanks and consortia, was launched in September 2020.[290] Another new initiative, Trase Finance, launched in September 2020, links the trade of commodities that drive deforestation to financial markets worldwide by connecting data on company ownership and investment to Trase's data on deforestation risk linked to supply chains. The initiative will be focused on soft commodities, with an initial coverage of cattle and palm oil—which are tied closely to smallholder production—as well as soy.

Multilateral development banks and bilateral donors' social and environmental safeguards generally align with best practice. Independent assessment, nevertheless, indicates shortcomings in the implementation of these safeguards, while institutions fail to publish information on their impact on forests.

International donors that are OECD members have broadly agreed on a common approach for environmental and social due diligence to identify and address any impacts deriving from their investments.[291] OECD members are expected to use relevant World Bank Policies, Safeguards, and Guidelines, and the IFC Performance Standards.[291] These standards are subject to much scrutiny by civil society and are generally considered best

t 21 of 150 financial institutions assessed in the Forest 500 (2019). Data provided by Global Canopy.

practice, as they comprehensively address risks, including indirect and cumulative ones from different sectors.

Independent assessments nevertheless point to weaknesses in the design and implementation of these safeguards. A recent study on the impacts of development bank funding in the Andean Amazon, where countries like Bolivia, Ecuador, and Peru have seen a surge in infrastructure investments, found that safeguard systems of donors as well as governments had failed to prevent negative impacts.[292] Impacts were so severe that they impaired project goals leading to delays and even cancellations. The main weaknesses were inadequate stakeholder engagement, EIAs, and an overall lack of transparency and oversight. The study specifically notes the importance of comprehensively assessing indirect and cumulative impacts, such as on migration or mega-projects funded by several donors. A lack of such practices had created social conflicts and as a result damaged the reputation of lenders.

Similarly, NGOs have identified weaknesses in the safeguard policies adopted by the Asian Infrastructure Development Bank, one of the main funding instruments for infrastructure and energy investments in the Belt and Road Initiative (BRI). The policy fails to include a body for independent investigation, which impairs accountability, and has additional weaknesses related to transparency and the handling of complaints.[293]

While safeguards are generally applied, it is also unclear to what extent these investments and related support programs from multilateral development banks and public donors result—or not—in impacts on forests. The World Bank Group, for example, fails to publish data on forest-related impacts across its operations.[294]

In addition, according to the Bank Information Center, although forest monitoring tools are applied extensively for forestry sector projects, the same tools are not being used to monitor and mitigate forest impacts from other World Bank Group development projects.[295]

Even when some financial institutions and international development banks make progress with their sustainability commitments, there is still a major and largely opaque financial market without any policies to protect forests. Development banks and other financial institutions that rely on domestic government policies, as is the case for large parts of the Belt and Road Initiative, are exposed to large risks.

The complexity of financing arrangements, and the increase in funding from relatively new funders such as banks from emerging markets, makes it difficult to assess large-scale projects in the mining and infrastructure sectors. The recent infrastructure boom in the Andean Amazon, for example, has been funded increasingly by state-owned Chinese banks that largely defer the management of environmental and social risks to host countries.[292] In areas of weak governance, this approach risks insufficient application of safeguards and can cause major harm, such as deforestation or social conflicts, as was the case for several large-scale projects in the Andean Amazon (see above).[292]

This is also the approach that major funding institutions use for the world's largest megaproject, the Belt and Road Initiative (BRI), also known as "One Belt, One Road" **(Box 16)**. Combined with a lack of transparency in the decentralized planning of BRI projects, this approach reduces financial actors' ability to assess projects' sustainability.

BOX 16. Case study: The unprecedented challenge of greening the Belt and Road Initiative

The Belt and Road Initiative (BRI) was launched by the Chinese government in 2013 to increase regional transportation and economic integration across Eurasia and beyond.[296] An estimated 126 countries have signed bilateral agreements with China related to the initiative, including mostly middle and low-income developing countries.[297] A large share of the known projects relate to power generation (especially hydropower and coal-fired power plants) in addition to linear transport infrastructure.[197]

Despite being promoted by China as a mechanism to work with its international partners toward "ecological civilization" in pursuit of achieving the SDGs,[298] independent analyses have identified major direct and indirect environmental risks—particularly for Southeast Asia and tropical Africa. A 2019 study found that infrastructure development along the BRI would endanger 4,138 animal and 7,371 plant species, and that BRI corridors would intersect 1,738 important bird areas and 46 biodiversity hotspots, mostly in forests.[299]

The BRI's unprecedented geographic scope is matched by the scale of its financing needs. An estimated 1 to 8 trillion USD will be mobilized into overseas infrastructure projects between 2017 and 2027.[296] Financiers include Chinese state-owned policy banks as well as a range of regional funding mechanisms led by China, such as the Silk Road Fund, the Energy Development Fund, and the Asian Infrastructure Investment Bank.[300,301] In addition, direct state funding from participant countries and commercial banks round out the bulk of funding, while multilateral investors such as multilateral development banks and private-public partnerships supply a smaller portion.[302]

The quality of environmental safeguards and guidelines for BRI financing is mixed. The Chinese government has released several guidelines and initiatives for Chinese entities , such as the *Guidance on Promoting Green Belt and Road* and the *Belt and Road Ecological and Environmental Cooperation Plan (BREECP)*.[197] While these safeguards are not binding, environmental requirements for BRI projects are largely guided by the regulations of host country governments, which are in many regions weakly designed or enforced. Safeguards required by multilateral lending institutions tend to be more stringent; however, they apply only to the subset of projects.[197]

A major barrier to the accountability of this initiative is the complexity and opacity of project planning and development.197 Because many projects cross country borders, environmental impact assessments conducted in each country do not account for their cumulative impact.[197] Decentralized planning leads to scattered and incomplete data on planning considerations and project outcomes. This lack of data impedes proper assessment of project risks.[303]

Due to a lack of transparency on implementation, monitoring, and enforcement of environmental standards, there is growing concern that BRI investors will prefer to invest in countries with weaker regulations overall.[300] However, recent reports[297,299,304] linked to Chinese institutions have provided a new level of transparency into potential impacts and the internal debate among Chinese experts on the balance of risks and benefits.[303] New multisector initiatives , such as the Green Investment Principles,[305] have emerged in the last few years to address the lack of transparency in projects' environmental impacts to enable sustainable financing decisions. With the BREECP, the government of China also set up a fund to enhance integrated environmental assessments, which could help to address cumulative and indirect impacts at the mega-scale.

There is also a lack of transparency over financial institutions and international donors *avoiding* investments with high forest risks. This is particularly important for the coal sector, due to the large impact on forests in some geographies—and therefore a double climate risk.

There is a clear need to phase out coal, oil, and gas, especially from power generation, not only for their direct emissions from combustion, but also for their contribution to deforestation in forest areas **(see Section 2.1)** and resulting release of CO_2. Although we lack information on efforts specifically relevant to geographies where coal is known to drive large-scale deforestation, overall progress by financial institutions in phasing out coal is slow. According to a recent analysis of the coal policies of banks, insurers, asset owners, and asset managers around the globe, at least 216 top financial institutions have no policies to limit or exclude coal from their portfolios.[306] Among the 214 financial institutions found to have a coal policy, only 16 have high-quality policies. Most coal policies identified were found to be too weak to prevent further growth of the coal sector.[307]

While multilateral development banks have made more progress, it appears that neither the deforestation risks of these sectors, nor the indirect climate risks through deforestation, are yet seriously considered in investment decisions. Institutions such as the World Bank and the Inter-American Development Bank (IDB) are stopping finance to fossil fuels. The World Bank, for example, currently restricts financing in the coal sector and announced, in December 2017, that it would stop financing oil and gas exploration projects by 2020. A recent study found that some World Bank funding, though, is indirectly still working against low carbon development.[308] Through project finance and policy-based assistance, it is in effect both reducing the cost of finance and providing investment incentives that contribute to increasing profit margins for fossil fuel operations.

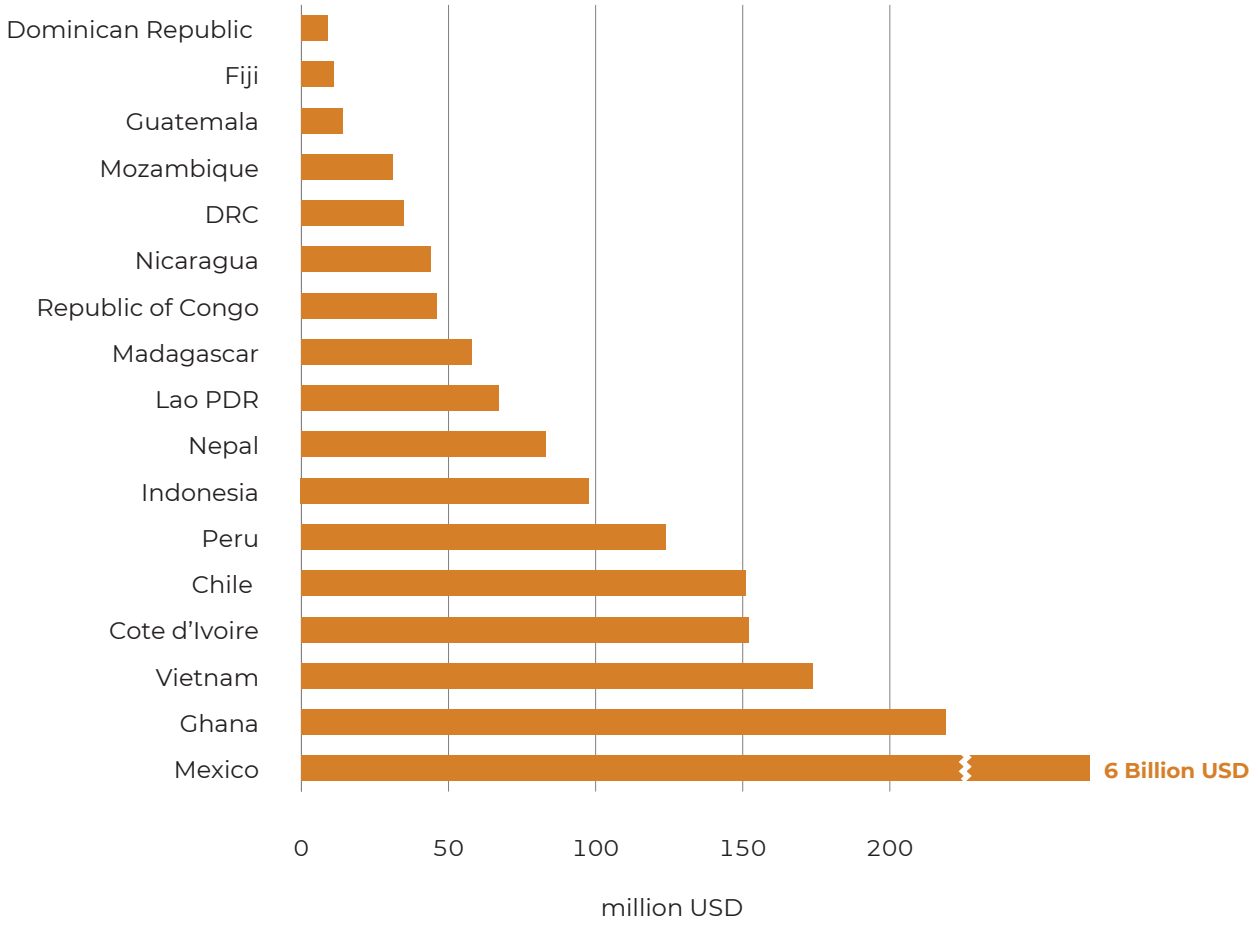
New rules point to clearer action: the new IDB environmental and social performance standards prohibit funding for coal mining or oil extraction projects.[309] And in September 2020, the IFC published new rules wherein it will no longer make equity investments in financial institutions that do not have a plan to phase out support for coal by 2030.[310]

7.2 Are international donors and the financial sector promoting investments in reducing poverty while preventing deforestation?

REDD+ initiatives have mobilized at least USD 7.6 billion of international and domestic public finance to address poverty-driven deforestation. Programs are more or less aligned with the PRIME framework, but programs are still in early stages, and funding flows for most countries are miniscule compared to non-forest-aligned investments.

Many forest countries, with the support of various donors, plan investments in REDD+ program activities to support alternatives to poverty-driven deforestation **(see also Section 4.3 for a discussion of how these align with the PRIME framework)**. Among the 17 forest countries that have developed jurisdictional REDD+ Emission Reduction Programs under the FCPF Carbon Fund, all plan investments in activities addressed at Goal 4 drivers **(Figure 8)**.[311] For many countries, the majority of these funds come from donors, such as bilateral donors or international funds like the Forest Investment Program or the Central African Forest Initiative), while some cover investments with domestic budgets (e.g. Mexico, Chile, Ghana). **(see Goal 8 assessment for details)**.

Figure 8. REDD+ investments in Goal 4 activities, in million USD



Note: DRC = Democratic Republic of the Congo. Lao PDR = Lao People's Democratic Republic.

Source: Climate Focus analysis of Emissions Reduction Program Documents under the Forest Carbon Partnership Facility's Carbon Fund

The impact of relevant funding commitments and disbursements is often unclear or too early to assess. Most of the international funding initiatives, for example, are still unable to report impacts (e.g. in terms of forest area protected) beyond initial policy milestones, e.g. the FCPF Carbon Fund, the Forest Investment Program or the Central African Forest Initiative **(see Goal 8 assessment for details)**.

Donors and governments could do more to maximize synergies by aligning interventions in other sectors with forest goals, beyond just using safeguards.

Compared to other finance, especially investments flowing to driver sectors without any consideration of forest goals, these investments are also minor. In Côte D'Ivoire, for example, an assessment found that out of USD 136 million in finance allocated to sectors relevant for driving deforestation, only 13 percent was clearly aligned with REDD+ goals.[312] Especially when coming from international donors, finance for driver sectors is generally the subject to environmental safeguards to mitigate negative effects, yet this still shows an imbalance toward financing that puts forest at risk.[312] Notably, non-aligned finance was largely allocated to agricultural intensification, an intervention that is essential to address deforestation linked to poverty. Alignment therefore has potential to exploit synergies between forest goals and other SDGs.

After adopting its Forest Action Plan, the World Bank Group succeeded at increasing funding for forest positive programs in the forestry sector. While this is positive—in Mozambique, Mexico and Colombia, for example, a majority of the funding shifted towards forest-positive interventions—the bank still needs to mainstream forest goals into other sectors that drive deforestation, such as infrastructure, energy, extractives, and agriculture.[294]

While in nascent stages, a number of impact investors or relevant platforms show potential to address poverty-driven deforestation by offering long-term capital, supporting job creation and increased income with tropical forest protection and restoration components. We found limited information on the impacts of these investments.

A number of impact investors or platforms to facilitate such investments have emerged. Some initiatives, such as &GreenFund, the Tropical Landscapes Finance Facility in Indonesia, the Althelia Climate Fund, EcoEnterprises Fund, and the Moringa Fund, offer opportunities for partnerships between investors to mobilize finance for smallholder farmers and enterprises to achieve positive environmental and social impacts. Overall, in our Goal 8 assessment we identify investments or allocations at a scale of USD 683 million in funding capital. However, these initiatives support a wide range of activities to protect forests and it is unclear to what extent they are relevant for smallholder supply chains or other poverty driven activities. The amount of private capital mobilized through these investment funds is rarely reported.

CHAPTER 8.

Barriers to progress

The previous chapters have made clear that governments, companies, and financial actors are largely aware of the forest risks of infrastructure development and extractive industries, and of the need to secure economic opportunities for local communities that do not result in deforestation or forest degradation. They have made efforts to align high-level planning forest goals; to mitigate the forest impacts of development projects; and to support poverty alleviation interventions with complementary investments that protect forests. Meanwhile, grassroots actors have spent decades working to influence infrastructure and extractive industry planning and development, and to demonstrate the potential of alternative modes of forest management and development trajectories.

Why, then, have these efforts resulted in only slow overall progress? In this chapter, we describe barriers to progress that have emerged as common themes throughout this progress assessment. These issues recur across sectors, actors, regions, and scales, and provide countervailing forces against efforts to make change. We also take a deep dive to explore how some of these barriers play out within the specific historical, political, and economic contexts of critical forest regions: the Congo Basin, Southeast Asia, and the Western Amazon.

Despite some progress, a widespread lack of transparency continues to impair accountability of governments, companies, international donors, and other financial actors.

The number of commitments and policy goals to protect forests keeps increasing. Governments are adopting REDD+ strategies; companies are making commitments to address sustainability concerns in mining; financial institutions are signing up to sustainable lending principles. But action is what counts. We find limited information about progress made in implementing these commitments so the conclusion must be that progress itself is limited: most actors would not hesitate to make evidence of their successes publicly available. This lack of transparency related to such commitments reflects a general context of opacity that prevails in the extractive and infrastructure sectors.

In many ways, the limited transparency in the extractive and infrastructure sectors starts at the top. Macro-economic planning processes, including decisions on how natural resources will be managed, and at what scale and in what form infrastructure will be constructed, happen largely behind closed doors. Megaprojects are planned and announced by governments and investors, without meaningful insight and participation of civil society and grassroots stakeholders, likely limiting initiatives that would pressure governments or companies toward more accountability. Except for a few examples, the evidence is insufficient to truly understand whether and how trade-offs are considered in this planning and decision making.

Similarly, financial transparency is limited in the infrastructure sector in particular. Increasingly complex financial instruments are used including combinations of national pension funds, equity investments via public-private partnerships, co-lending instruments of the IFC, and financing from Chinese state-owned banks. The environmental policies of other private sector actors, like construction companies, have been rarely examined or disclosed.[197]

Accountability in the mining sector is better than in infrastructure, likely because civil society has been more active in calling out human rights violations (for example, in Canada[299]) and the misalignment between corporate action and public-facing pledges or policies. Consumers and consumer-facing companies are also increasingly aware of sustainability risks of the mined materials omnipresent in technology and other consumer goods, spurring more substantive engagement in sustainable supply-chain initiatives among these companies.[314]

In the agricultural sector, companies are ahead of their mining and infrastructure peers in detailed commitments to reduce the forest impacts of their supply chains.
While these and emerging commitments from extractive sectors allow for some assessment of progress, transparency is still quite limited for several reasons. This makes it difficult to judge the quality of implementation to hold actors accountable against their commitments, and to motivate further progress:

- Most information on voluntary commitments is self-reported and not independently verified. Companies tend to focus on communicating their successes rather than providing a comprehensive overview of their progress and failures.
- Complex supply chains, especially for palm oil, cocoa, and beef, make it difficult, yet not impossible for buyers to trace materials back to their origin, especially for small-scale producers **(see Goal 2 assessment)**. While technically possible, full traceability would involve significant cost that most companies have been unwilling to pay.
- The wide variety of standards for managing forest and biodiversity impacts suffers from incoherence and the lack of common norms and science-based frameworks for action. For example, in the mining sector, several mining standards refer to “indirect or cumulative impacts” on biodiversity. Yet the descriptions of such impacts vary across standards, and evidence from company disclosures indicates widely varying interpretations of company responsibilities **(see Chapter 5)**. Similarly, environmental

reporting is often fragmented, with companies reporting their efforts on biodiversity and on carbon separately.

- Across sectors, there is a lack of impact measurement in reporting and disclosures, making it difficult to link efforts to reductions in deforestation.
- Monitoring rarely incorporates local communities to monitor local level impacts of company activities and efforts to address deforestation risks.

Governments often grapple with implementing existing forest policies due to a lack of political will, capacity, and stability. An imbalance in power among government agencies allows vested interests to shape enforcement regimes, enabling profits despite the environmental and social costs.

In many forest countries, policies and laws that aim to safeguard forests—such as the regulation of investments or the provision of agricultural extension services—do exist on paper. However, respect for and implementation of these policies is often weak. Some governments also fail to address structural problems that underlie forest loss, such as tenure insecurity. Without certainty of land access, small-scale actors cannot invest in improved forest management and agricultural practices, while Indigenous peoples, local communities, and the rural poor have little recourse when their land is claimed by companies and investors.

In developing countries, in particular, environmental and forest authorities often lack sufficient capacity and funding compared to agriculture, mining, and energy ministries, rendering them ill-equipped to counter vested interests from these sectors.[12,129,315,316] These authorities, like the environmental policies they aim to implement, are weakened not just because of a lack of capacity but because powerful actors have an interest in sidelining them.

Political leaders often favor economic development based on resource exploitation and agricultural expansion. Opening land for exploitation can win votes through promises of economic development, bring public revenues and, in some cases, personal revenues through corruption. The infrastructure sector in particular is known for its limited accountability and endemic corruption. For example, one of the most significant corruption scandals in history revolved around Brazilian construction company Odebrecht. The largest construction company in Latin America, Odebrecht had paid bribes to heads of state and other government officials across the region and Africa, in exchange for lucrative construction contracts.[317]

At the same time, too many decision-makers give low priority to forests and to forest-dependent people, to the extent that any measure to mitigate negative impacts on forests, and people dependent on them, is lukewarm at best. We find evidence for intentional weakening of policies and institutions, especially under cover of the COVID-19 crisis. For example, federal agencies in the US have been directed to no longer consider the indirect or cumulative environmental effects of infrastructure projects **(see Section 4.2)**.

Another reason for limited progress is the instability of governments. Where governments give higher priority to forests and, for example, enforcement capacities are strengthened (e.g. in Brazil in the mid-2010s), the resulting protections for forests can be short-lived as new administrations come into power, putting forest at risk anew.[318] This instability is a major barrier to building durable and effective institutions, particularly in countries that suffer from internal conflicts, such as the Democratic Republic of the Congo, the Central African Republic, and Colombia.[319]

Support that is aligned with all five PRIME dimensions has not been scaled up. An underlying lack of trust and stability in company-smallholder relationships undermines support programs, while public-private coordination to align complementary interventions is still in nascent stages.

A number of promising efforts demonstrate that the problems of poverty and deforestation can be addressed comprehensively. For example, company and civil society initiatives

directly engaging with smallholders in the cocoa and palm sector, especially those in out-grower schemes, have contributed to reducing deforestation and poverty for many years. Yet, it is challenging to scale these types of programs for several reasons.

Most companies that engage in sustainability efforts focus on working with their direct suppliers, often organized in outgrower schemes. They have motivations in addition to addressing forest risks, such as securing quantity and quality of supply. But companies want exclusivity in return for support, while smallholders are reluctant to bind themselves in production contracts with specific companies. Meanwhile, for example in the palm oil sector in Indonesia, smallholders find many other buyers, generally middlemen who may then sell markets with lower sustainability standards, such as domestic markets or emerging economies like China and India. Companies with commitments that are unable to trace their products back to the producer will also still buy products from smallholders that do not receive support for more forest-friendly practices. In the case of cocoa, the low price of raw materials also limits incentives for farmers to enter into contracts with companies.

At the same time, governments invest too little and have limited capacities to promote the comprehensive reforms and interventions needed to ensure that land developments are sustainable, protecting forests and contributing to the livelihoods of the rural poor. Many of the interventions identified in this report were one-dimensional and failed to address the systemic nature of both poverty and deforestation. In Indonesia, for example, the palm oil smallholder sector contributed significantly to poverty reduction, but the government has not enforced regulations or effectively promoted better practices to protect forests.

As part of jurisdictional approaches in the context of REDD+, some companies have started collaborating with each other and with government and civil society to address deforestation through collective and coordinated action. These collaborative models have much potential to address the problem comprehensively, however, they are still in the early stages. Similarly, governments have planned a number of interventions targeted at deforestation drivers associated with poverty in the context of REDD+ plans.

Another barrier to progress is the power disparity between governments and companies, on the one hand, and local people, especially IPLCs, on the other. Conflicts over land and resource use result in the criminalization and murder of environmental defenders.

When it comes to economic development, and the allocation and use of forest lands, local people tend to have very little say in decision-making processes. Instead, poor populations and vulnerable communities are pushed toward the frontier and further into forests due to a lack of alternative options for local economic development. Meanwhile other Indigenous, Afro-descendant, and traditional forest dwellers are often forced out of forests to become part of already chaotic processes of urbanization.

Overall, the land and forest sector suffer from an imbalance in power, where powerful corporations and national elites influence decision-making to facilitate resource exploitation, while grassroots actors who express their preferences are shunted aside or ignored. High levels of economic inequality can undermine the institutions and incentives that enable sustainable livelihood activities, including reduced access to land and the prevention of collective action.[320]

Weak recognition of customary land ownership or territorial sovereignty further undermines community efforts to assert their right to self-determination. In practice, processes that are designed to re-balance power toward communities—like FPIC—often get translated into bureaucratic exercises conducted superficially, without proper language or cultural provisions, or with inaccurate or incomplete information, thus denying IPLCs a real chance to voice potential dissent.

Recent years have seen escalating violence against environmental defenders, which further limits the accountability of companies and governments.[242] Criminalization of protest and violence against environmental defenders, including IPLCs, has been utilized as a tool of

control and intimidation by powerful agents seeking to secure control of natural resources. States' responses to IPLC and grassroots environmentalists have increasingly involved systematic and deliberate suppression and the use of legal mechanisms such as penal laws and anti-terrorist legislations, which justify the detention of activists.[321,227] The mining sector accounts for the highest number (21 percent) of reported environmental conflicts in the Environmental Justice Atlas.[223] Extractives sectors also account for the highest number of murders of environmental defenders—50 in 2019.[242]

Similarly, civil society and grassroots movements are actively hindered in their engagement to protect the rights and interests of local communities and forests. In a recent example, the Mexican president publicly attacked civil society organizations after they opposed a large infrastructure project, the "Maya train," accusing them of being subject to the influence of foreign donors. Groups had criticized the project due to environmental concerns as it runs through several protected areas, and because of a lack of planning transparency for local communities.[322]

Especially in the Global North, economies continue to rely on commodities produced in developing and emerging economies, enabled by production practices linked with deforestation. Governments, companies, and consumers need to take more responsibility for environmental and social externalities not reflected in market prices.

REDD+ —a mechanism for financial partnerships between developed and developing countries – has led to some positive policy changes. Many forest countries have initiated reforms and policies to address the problem of deforestation comprehensively, such as strengthening institutions and improving capacity of local stakeholders. However, despite the large potential of this mechanism, its realization has taken longer than anticipated. Many countries are still in a preparation process after more than a decade, and others are still unable to sustainably implement and scale their activities, while forests continue to be lost at an enormous speed.

This delay can be partially explained by the complexity of enacting and sustaining the reforms and capacity-building necessary to comprehensively address deforestation and forest degradation from all sectors. Incentives to keep forests standing often cannot compete with the short-term economic and political wins from converting forests, and REDD+ programs typically engage environmental or forestry ministries without engaging other, usually more influential ministries. Additionally, forest countries often struggle to navigate the various conditions set by donors. These requirements create additional barriers to establishing the successful partnerships between forest and donor nations, a fundamental prerequisite to implementing REDD+ at scale. Finally, to accelerate and achieve lasting large-scale outcomes, additional sources of finance—both public and private—need to be mobilized.

Despite an increasing number of initiatives by consumer country governments, measures to ensure sustainability of imports are still in their early stages or are merely voluntary, existing only as and platforms to support efforts **(see Goal 2 assessment)**. Similarly, though consumer awareness is increasing, it is still limited and buying habits have not yet changed.[329]

Supply chain and consumer-facing companies also need to step up their responsibilities. The large—indirect and cumulative—risks for forests are barely known to the wider public. While supply chain companies fail to take responsibility for social and environmental risks, buyers also exert limited influence on them. A closer look at some of the world's largest tech companies, Apple,[323] Microsoft[324] or Tesla,[325,326] that all rely on mined goods from forest regions, reveal that relevant policies suffer from vagueness or do not explicitly refer to forests, nor to broader concepts such as biodiversity or ecosystems. Apple, for example, states the company "anticipates that in the future only suppliers exceeding minimum requirements and operating at the best practice level are likely to remain in Apple's supply chain."[323] If this statement was translated into a more specific policy with a scope

that clearly applied to the conversion of forests, this could motivate mining companies to improve legal compliance or seek certification of additional mining operations.

8.1 Insights from forest risk regions

The above barriers have been broadly identified across sectors and regions as recurring patterns that hinder progress toward NYDF Goals 3 and 4. However, the complex interactions of actors who control the fate of forests, and the communities who seek to exert their right to self-determination, are, to a large extent, specific to the historical, legal, social, and economic contexts of different forest geographies. In order to overcome these barriers to progress, it is necessary to understand how these issues play out on the ground.

In the below case studies, we provide an overview of the barriers to progress as they appear in each of three critical tropical forest regions: the Congo Basin, Southeast Asia, and the Western Amazon. What dominant paradigms of development constrain alternative pathways for sustainable development? Where have actors been shut out of power, alleviating pressure both for changes and adherence to extant law, and precluding possibilities for reorganizing development approaches? In attempting to answer these questions, we aim to set a foundation for understanding that may spark creative discussion and localized solutions to overcome these barriers.

REGIONAL ANALYSIS

Congo Basin

The Congo Basin has a long and ongoing history of political instability and conflict, impairing governance in the land sector.

Peace and political stability, largely absent in many parts of the region in recent decades, are necessary conditions not only for the conservation of forests and associated carbon stocks, but also for the successful implementation of alternative sustainable land use options. In the countries of the Congo Basin, and particularly in the DRC and the Central African Republic (CAR), political instability has resulted in patchy state presence within their borders. In practice, farmers' inability to rely on markets for inputs or outputs due to a lack of transport connectivity[327] has promoted a culture of complete self-reliance, and pushed rural populations to attempt to carve out basic subsistence livelihoods, relying heavily on forest resources.[55]

Across the region, the absence of the state in remote areas leads to continued failure to address declining agricultural productivity and lack of employment opportunities.[328] Instability serves to exacerbate unsustainable land use and deforestation, and hinders efforts to establish more sustainable livelihoods.[329] Violence and armed conflict—the most extreme forms of political instability—exacerbate existing regional drivers of deforestation.[330] They produce strong disincentives for sustainable land use options for smallholders[319] through the displacement and resettlement of affected populations and the use of natural resources for conflict funding or insecure land tenure resulting from extreme instability.[319] Armed conflict was found to increase deforestation during DRC's second civil war (1998–2003)[331] and it is likely that ongoing conditions of violence in the Congo Basin (DRC, CAR, and Cameroon[332]) are not only slowing the adoption of more sustainable land use options but also slowing efforts to reduce deforestation rates, as many smallholders move into remaining forests to escape conflict and insecurity.[333]

The Congo region is emerging as a new deforestation front, with tree cover loss rates doubling over the last decade and annual loss outpacing rates in tropical Asia since 2017.

The annual tree cover loss in the Congo Basin has consistently been larger than the annual tree cover loss in tropical Asia since 2017, suggesting the establishment of a new regional frontier for tree cover loss.[121] Indeed, the Congo Basin has doubled its deforestation rates over the last two decades.[55] Between 2001 and 2018, the area lost over 22 million hectares of tree cover,[55,334] and, since 2014, three countries—the DRC, the Republic of Congo, and Cameroon—have together lost 7.6 million hectares of forest land.[335]

Between 2000 and 2014, small-scale agriculture and—to a smaller extent—clearing for charcoal production, drove 84 percent of tree cover loss in the Congo Basin.[55] Infrastructure, mining, and other extractive industries are important drivers of deforestation.

Smallholder farmers play a more important role in Congo Basin countries' deforestation dynamics than they do in southeast Asia and Latin America, which may be explained by the region's relative lack of better-remunerated employment opportunities in other sectors.[336] Shifting agriculture takes place in over a quarter of all forested land in the DRC and accounts for 70 percent of total tree cover loss.[337] It is important to note that tree cover loss in these systems is, in principle, temporary and does not lead to permanent land use conversion. Evidence indicates, however, that shifting cultivation is not only affecting secondary forests but also expanding rapidly into previously undisturbed forest regions.[55,34]

The establishment of activities such as logging and mining—and their associated access infrastructure—exerts a strong indirect impact on tropical deforestation by attracting working populations to remote locations, and creating communities that rely on forest resources and small-scale agriculture **(see Chapter 2)**.[34] It has also led to the proliferation of shifting agriculture, which today remains by far the main proximate driver of deforestation in the region.[55]

This trend is likely to intensify due to increasing urban and rural populations, ongoing infrastructure development, leakage from other forest risk countries, and further market integration.

Large population growth is expected to unfold across the region, especially the DRC and the CAR.

With a population of nearly 87 million people,[338] DRC accounts for twice the population of the rest of the Congo Basin countries combined, and could reach 362 million by 2100[339]—a fourfold increase which poses a severe challenge to forest resources.[55] The strong correlation between population and forest loss rates indicates an observable lack of agricultural intensification,[55] while demand for fuelwood and charcoal from growing cities also contributes significantly to forest degradation.[77] Given the expected population growth, the fate of forests in the region will largely be a function of alternative development strategies.[55] Pacts and bargains made by dominant elites affect the space and options for development thereafter.[315] As a result, governments may not prioritize nor develop inclusive development that would provide alternative livelihoods and reduce poverty.

Large infrastructure and extractive sector projects that are being promoted to increase economic development are expected to expand in the coming decades, heightening the risk of rapidly increasing rates of deforestation and opening them up for logging and agricultural use. In 2015, a study of 33 development corridors in sub-Saharan Africa found that 18 percent of these projects were "inadvisable" due to their adverse implications for areas of high conservation value and their low potential agricultural benefits. On average, pre-existing corridors were found to have a significantly higher agricultural potential than those planned.[18]

In addition, due to increasing global land scarcity and policy changes in certain regions of Asia and Latin America, rising global demand for agricultural commodities could displace deforestation to the Congo Basin from other regions,[340] where suitable agricultural land and abundant cheap labor may be found.[340] While production is still mainly directed towards domestic markets, it is becoming more export-oriented and a high share of land is allocated to foreign investors, particularly for oil palm production.[341,342] Across Sub-Saharan Africa, the four Congo Basin countries - DRC, Gabon, Republic of the Congo, and Cameroon—together with Sierra Leone, Liberia and Côte d'Ivoire present the most serious risks of agricultural expansion into forests, in part because of their high percentage of forest cover and relatively lower availability of cropland outside forested areas.[340]

Attempts to reduce deforestation have failed to address poverty as well, nor have they provided viable alternative means of subsistence for local populations.

A key dimension of PRIME, the recognition of communities' rights to forest land and resources in the region remains extremely limited,[343] despite various positive initiatives aiming to implement community-based forest management (CFM). To date, this model has yet to become embedded or sufficiently empowered to become a convincing alternative method for land use and development.[344] In Cameroon, although local communities that rely on CFM appear to be benefiting financially, they lack market access and the capacity to capture added value in the market chain. This is caused by a lack of technical skills, long distances to markets, competition from industrial loggers, the quality of capacity building support that they receive, and overall levels of political support.[345,175] In the DRC, the growing number of pilot projects for CFM, such as the local community forest concessions, demonstrates progress. Yet projects often lack financial viability and are skewed towards rural development goals and not sustainable forestry operations per se.[346]

Since government presence is lacking in remote areas, particularly in conflict-torn countries such as the DRC and CAR, it is very challenging for governments to address even the most problems of food insecurity through formal policies and to provide support for the adoption of sustainable practices aligned with the PRIME dimensions. Even if government is present, levels of insecurity can still be severe.

International REDD+ finance has not begun to flow despite years of preparation, while grey development investments continue to threaten forests.

Several countries in the region are setting up REDD+ policies and measures, and the DRC is one of the first countries globally to fulfill all relevant requirements to sign an agreement for emissions reduction payments with the FCPF Carbon Fund. While the country has yet to receive results-based payments, it has made initial progress with certain policy reforms, such as adopting a strategy that addresses impacts from future infrastructure for large and small-scale mining.[39] The strategy has outlined possible effective mitigation measures and financial compensation that could be used to fund REDD+ activities, reforms to clarify land rights status, and reforestation requirements after

extraction. Other countries in the region propose similar measures in their planning documents but are less advanced in the FCPF process and have yet to reach the final negotiations of an agreement with the fund.

Although still at early stages, there is a promising funding initiative being developed and implemented in the Congo Basin: the Central African Forest Initiative (CAFI). A central challenge for the Congo Basin countries, improved land-use planning is at the heart of CAFI's action in the DRC, Gabon, and the CAR.[112] In DRC, as a result, a new land use planning policy was adopted in January 2020.[112] In the DRC, CAFI is also funding six flagship Integrated Rural Development Programs to address the drivers of deforestation in an integrated and sustainable development-oriented manner by not only fighting the drivers of deforestation, but also promoting adaptation strategies.[347]

However, broader development finance may affect forest resources negatively and, by a large share, exceeds funding targeted at forest goals. For example, the World Bank supports many different programs attempting to bring about economic development across different sectors while improving local livelihoods. Yet, a report by the Bank Information Center finds that the World Bank Group's investments in the DRC "remain skewed heavily towards projects associated with deforestation" despite efforts in recent years to invest in forest protection and sustainable forest management.[294]

REGIONAL ANALYSIS

Southeast Asia

Natural resource exploitation and agricultural expansion have historically been important pillars of national development in Malaysia, Indonesia, and Papua New Guinea. Yet, they have caused widespread deforestation in these three countries that host the largest remaining tropical forest in the region.

Infrastructure development as an enabler for growth and resource exploitation has been an important economic priority in Indonesia, Malaysia, and Papua New Guinea. Compared to other regions, Southeast Asia has the greatest number of hydropower dams under construction,[348] the highest rate of mining in the tropics,[348] and is a major exporter of limestone and various minerals globally. Mineral resources including gold, copper, oil, and gas provide approximately a third of government revenue in PNG, for example.[349] Though frequently overlooked as a driver of deforestation in the region, mining represents an important threat to forests. Between 2000 and 2014, coal mining in Sumatra, Indonesia, accounted for a similar rate of deforestation in its concessions compared to palm and timber concessions,[350] and in Indonesia alone, active coal mining is estimated to affect 1.74 million hectares of forest.[350] In addition to their direct impact, the roads and railways built, or planned, to transport these goods have caused deforestation and continue to threaten forests and biodiversity by fragmenting the landscape.[348]

In Indonesia and Malaysia, where governments have historically promoted agricultural intensification from shifting cultivation to increase national economic independence and reduce poverty, palm oil cultivation rapidly increased.[351,352] In Indonesia, for example, the area under palm oil cultivation grew from 300,000 hectares in 1980 to 14.7 million hectares in 2019, 41 percent of which is managed by scheme and independent smallholders.[u],[353] While these policies have brought profit to the sector (palm oil exports were valued at USD 21 billion in 2018),[354] palm oil has added a relatively small amount to the Indonesian economy: the average contribution of Indonesia's estate crops (including oil palm and rubber) to GDP only amounted to 2.2 percent annually during its peak.[355] Meanwhile, this rapid increase in palm oil cultivation has driven deforestation, including by smallholders. In the past 40 years, palm oil accounted for an estimated 47 percent and 16 percent of total deforestation in Malaysia and Indonesia, respectively.[56]

Government planning for national development across these Southeast Asian countries continues to rely primarily on an expansive and extractive model of economic growth. While there is little insight into planning processes, there is scant evidence that these have weighed up the tradeoffs for forests and other sustainable development goals.

Planned infrastructure developments are likely to increase pressure within remaining natural environments and often reflect interests conflicting with national conservation objectives.[356] In Indonesia, for example, the Trans-Papua Highway consists of around 4,000 kilometers of new roads planned by the Indonesian government to link agriculture, mining, and oil and gas hubs across the "underdeveloped" Papua province.[357] Cutting across Lorentz National Park, the megaproject will greatly increase human access to more than 50,000 hectares of designated mining concessions inside the park,[20] while impinging on Indigenous people's customary land rights which have not yet been formalized by the central government.[358] Another Russian-financed railway planned for Kalimantan will further open up areas for coal and palm oil activities.[359] Overall, future permits for coal mining could affect up to nine percent of Indonesia's remaining forests.[350] Since 2019, in Papua New Guinea, the national government is implementing two plans—"Missing Links" and "Other Planned Roads"—intended to

u The definition of smallholders adopted by the Roundtable on Sustainable Palm Oil is "farmers who grow oil palm, alongside with subsistence crops, where the family provides the majority of labour and the farm provides the principal source of income, and the planted oil palm area is less than 50 ha." Indonesia's Ministry of Agriculture sets the cut off at 25 hectares. However, in practice, independent smallholders are any growers who are not state-owned and private-sector companies; up to a third of "smallholder" farmers in Indonesia may be large investors who often do not farm their own land. See Jelsma, I., Schoneveld, G. C., Zoomers, A., & van Westen, A. C. M. (2017). Unpacking Indonesia's independent oil palm smallholders: An actor-disaggregated approach to identifying environmental and social performance challenges. *Land Use Policy*, 69, 281–297.

double the length of the country's road network by the end of 2022, despite the potentially catastrophic impacts on remaining intact forest.[360] Similarly, government action to degazette forest reserves in peninsular Malaysia for logging and mining has led to a sharp uptick in deforestation in recent years.[361]

Recent policy changes in Indonesia and investments in Papua New Guinea have sent mixed signals regarding the future of coal. Competing interests and a lack of political will to enact sustainable development have locked coal in for decades in Indonesia.

Over the years, the Indonesian government has set national targets to cap coal production and reduce overall emissions. Both national and provincial governments have enacted moratoria on new mining concessions.[359] These efforts, however, are undermined by recent policy changes that demonstrate a continued commitment to domestic coal production and consumption as a pillar of economic development. For example, allowing two-decade extensions of existing mining licenses, removing upper limits on the size of licenses, and relaxing mine rehabilitation policies.[114,359,362]

As a result, licensing of new coal mines in Indonesia has increased rapidly in the last 15 years, leading to higher production and export rates, along with a rise in illegal mining and land disputes.[359] Mining permits cover roughly 6.3 million hectares of Conservation Forest and Protected Forest areas in the country, of which about 15 percent are coal concessions.[363] Just this year, on May 12, 2020, Indonesia's parliament passed a revision to the Minerals and Coal Mining Law, granting mining companies greater freedoms while extending the scale and duration of their contracts, further weakening the law's previously ambiguous environmental and social obligations. Passed with relatively little public scrutiny due to the COVID-19 pandemic, the revision effectively serves to extend six major coal companies' mining permits for two consecutive ten-year periods.[364,365]

The revisions also preceded a larger "Omnibus Law" passed in October 2020 which intends to boost employment by reforming a suite of laws and regulations. Among other outcomes, this law reduces the requirement for ESIAs, which are now solely required for activities presenting "high environmental, social, economic and cultural risks," while heavily restricting civilian participation. Populations living near these "high-risk" projects are, as a result, no longer able to appeal the issued ESIAs.[366] The passing of the law, which provoked protests in Jakarta and other cities, was condemned by a coalition of fifteen activist groups as well as by a group of thirty-five investment firms managing a total of USD 1.4 trillion in assets, urging the government to restore the environmental safeguards.[367]

Indonesia's National Development Plan 2020–2024 offers an important opportunity to shift the country's emphasis towards greener growth. Under the revised plan, the government intends to address the interactions between land cover change, GHG emissions and sectoral development, namely by integrating low-carbon elements. Nonetheless, this shift relies on the endorsement of the national president and the private sector.[359] Furthermore, while Indonesia has formulated a commitment to decrease its GHG emissions by tackling deforestation and promoting renewable energy in its first NDC, coal-related commitments are missing.[359]

In a similar vein, while Papua New Guinea's NDC does state the country's intent to phase out fossil fuels and move towards 100 percent renewable energy generation by 2030, this commitment is contingent on international support[368] and reports indicate that the country has entered discussions to develop its coal mining industry.[349] Though the state-owned power company has yet to review a proposal from the Australian power company Mayur Resources to open three coal-fired power plants, in conjunction with solar and biofuel-based power generation, and the government has not granted any coal mining concessions, the idea of boosting industry and electrification through domestic coal production continues to garner support.[369]

The Government of Indonesia, for example, is committed to increasing palm oil output and intensifying production among smallholders. However, due to the lack of enforcement and much-needed support, growth in the sector is likely to continue to rely on area expansion.[160]

Primarily driven by the availability of cheap land and the profitability of palm oil farming even in low-output systems,[370] the massive expansion of smallholder palm oil has benefitted from limited enforcement and ambiguous laws at state and customary level,[371–373] poor coordination between government offices, conflicting interests between

central and local agencies, and limited capacity of local governments.[374–376]

At the same time, many Indonesian smallholders, especially those not associated with company outgrower schemes, lack access to trainings for better practices. Throughout the 1990s, this type of independent smallholder emerged as a new type of palm oil farmer, with no obligations to any specific company, but no guaranteed resources from the government or companies either.[159,377] Political decentralization in the late 1990s also led to extension services being delegated to the districts, which resulted in uneven funding and access to support programs across districts.[160] As a result, only about 18 percent of oil palm smallholders in Indonesia are reached by company support programs.[v] With little knowledge transfer from companies or from the government, scheme and independent smallholders alike lack crucial knowledge on using sustainable techniques to increase production without expanding the footprint of plantations. As the share of palm oil area cultivated by smallholders in Indonesia is expected to grow from 45 percent to 60 percent by 2030, further expansion into remaining forests and peatlands may occur.[378,58] Furthermore, as smallholder oil palm producers in Indonesia range from small local farmers with an average plot size of 1.2 hectares to large investor farmers with an average plot size of 49.6 hectares, the adoption of actor-disaggregated approaches is required to prevent further expansion.[372]

Finally, limited access to government data and maps creates another barrier to the management of the country's natural resources. Relying on the 2011 Geospatial Law, which stipulates that official geospatial information may only be released to prevent data misuse or alteration, the Ministry of Environment and Forestry has been restricting public access to information on concessions and exploitation of natural resources. In 2014, the Ministry issued a memo to exempt its departments from publishing data in shapefile format, which would allow more accurate analysis and increase the monitoring of extractive activities by civil-society watchdogs.[379] In 2019, the Indonesian Government called on the country's palm oil companies to refrain from publishing plantation data, alluding to national security, privacy, and competition reasons, despite it being a necessary step for sustainability certification under the Roundtable on Sustainable Palm Oil.[380]

***Leakage* from "green" to "brown" supply chains means that overall rates of deforestation will not be reduced. As long as domestic and regional markets are willing to absorb unsustainable commodity production—in palm oil and mining—the progress of certain actors in removing deforestation from their supply chains will be undermined.**

With neither smallholder palm oil nor mining subject to significant government intervention in support of forests, the likelihood of reducing deforestation caused by these activities seems quite distant. The RSPO, for example, has developed smallholder certification guidelines, but its reach has been extremely limited, with only about 5,130 independent smallholders certified as of 2019 in Indonesia.[381]

While a significant number of companies have made commitments—for instance, No Deforestation, No Peat, No Exploitation (NDPE) commitments cover 83 percent of palm oil refining capacity in Indonesia and Malaysia[382,383]—their level of implementation and reach among smallholders is unknown. Data on land-clearing trajectories of many RSPO members is missing and the zero-(net) deforestation pledges made by many palm-oil companies lack a clear, practical, and consistent definition that would improve accountability and credibility of these schemes.[384]

Furthermore, an increase in sustainable production does not necessarily equate with reductions in unsustainable production of similar proportions. Some domestic and regional markets still accept commodities produced with little or no environmental oversight. Palm oil not covered by NDPE commitments, for instance, was expected to account for 19 percent of Indonesia's palm oil diesel market in 2019.[383]

v Climate Focus analysis based on the assessment of 99 palm oil producers, processors, and traders by ZSL-SPOTT. https://www.spott.org/palm-oil/

REGIONAL ANALYSIS

Western Amazon

The economic development of Amazonian countries has been dependent on the exploitation of forests. Governments have locked in a development pathway that relies on exploitation, settlement, and expansion.

The economic potential of the Amazon's vast forest areas has long attracted the interest of governments, elites, and settlers. Since at least the middle of the last century, governments of Amazonian countries have actively promoted economic development through investment and settlement in forest regions, both in an effort to expand agriculture but also to secure national sovereignty over these areas. Governments of Bolivia, Brazil, Colombia, Peru, Ecuador, and Venezuela have directly and indirectly promoted policies that encourage human settlement in forests—a continuation of a colonial view that justifies appropriating forests seen as "unused" space and resources of peoples deemed "uncivilized".

This settlement approach to development continues today. Governments continue national and regional mega-infrastructure and extraction projects.

Corridors of forest loss are growing across the western Amazon as infrastructure development and corresponding agro-industrial expansion remain a foundation of development planning. Over the next 5 years there are plans to construct or update more than 12 thousand kilometers of roads across five Amazon countries,[w] with a total investment of approximately USD 27 billion.[385] If all planned projects are realized, they will cause the deforestation of approximately 2.4 million hectares over the next 20 years.[385] Even if some of these plans are not implemented in the end, the expectation of their construction can lead to land speculation that drives deforestation and conflict.[386,387] Many of these plans stem from a coordinated effort, begun in 2000 as a regional integration initiative and now known as the South American Infrastructure and Planning Council (COSIPLAN), to align regional strategic investments to boost agroindustry, forestry, and mining.[388] While COSIPLAN has been on hiatus since 2017, the projects largely continue at the national level.

A significant factor in the planning and financing of these large-scale development projects is often the influence of special interests on government decision-making. In the most widely evidenced example of the scale of corruption in the infrastructure sector, Odebrecht, a Brazilian construction company that became the largest highway builder in Latin America, ensnared government officials and political parties across the continent in its influence campaign through the payment of at least USD 786 million.[389] Generally, a lack of transparency in governments' infrastructure planning has shielded such influence campaigns, until this Lavo Jato ("Operation Car Wash") scandal was revealed by Brazilian law enforcement in 2014.

At the same time, Amazon countries continue to explore oil and gas reserves in forest areas with the argument that they are an important source of revenue. In the state of Amazonas, Brazil, a standing forest area of roughly 740,000 square kilometers has been granted as oil and gas concessions in the Solimões Sedimentary Area.[390] A proposed law (PL 191/2020) submitted in early 2020 would remove Indigenous communities' right to veto oil and gas projects on officially recognized Indigenous territories. Another example is the Yasuní-Ishpingo-Tambococha-Tipuntini park in Ecuador; while expanding the protected areas without oil, the government has approved plans for new drilling inside the park.[391]

In Venezuela, Ecuador, Colombia, Peru, and Brazil, mineral extraction is a key element of countries' economic development strategies. Venezuela and Ecuador, whose economies are highly dependent on oil and gas, are outlining key metal and mineral mining corridors in response to declining oil prices,[392] while Peru and Colombia have both established strategic mining areas in the Amazon. Mining is another important economic sector for Brazil. While most industrial mining takes place in the eastern Legal Amazon, there is growing interest in exploiting known mineral reserves in the western Amazon. Previous attempts to open a

w Bolivia, Brazil, Colombia, Peru, and Ecuador

4.6 million-hectare reserve in the state of Amapá, to both small- and large-scale mining were met with a large public outcry and overturned by the judiciary in 2017,[393] but there are growing concerns that the plan will be revived.[394] Current proposals for large-scale niobium mining in the northwest of the Brazilian Amazon would cause significant forest loss including in areas that are home to the Yanomami people.[395]

Recent efforts to address the expansion and impacts of ASM have faced challenges. Weak state governance has impeded progress on regulating small-scale mining.

Along with state-led extractive industries, ASM is also exacerbating forest loss. Between 1999 and 2014, the ASM workforce in Latin America more than doubled to 1.6 million workers across 19 countries.[396] A recent report identified at least 2,312 illegal mining sites and 245 concentrated areas in Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela.[397] A large portion of ASM is neither formalized nor regulated by the government, and it often corresponds to large-scale mining areas, including on Indigenous territories and protected areas. Mining concessions and illegal mining were recently found to overlap with more than 21 percent of Indigenous lands in the Amazon.[43]

Efforts to reduce the impact of ASM on forests in Peru, for example, have been undermined by several factors. Firstly, some members of local communities have become economically dependent on mining, and are resistant to restrictions on such activity, despite the social friction it has created between local groups.[398] Secondly, the state's lack of capacity to formalize existing small-scale miners, apply environmental standards, and specify appropriate technologies for extraction has resulted in the prolific use of environmentally-damaging machinery, such as front loaders or dredges.[399] Contradictory policies by different state agencies create mixed signals on whether mining is allowed in the region, and the criminalization of small-scale miners has increased, which has diminished local support for, and compliance with, regulations.[398]

Progress made in nominal and actual recognition of IPLC rights is being threatened or rolled back in the name of economic development, revealing the limit to which IPLCs have access to power and decision-making.

Significant progress has been made in protecting IPLCs and their forest territories, but those protections are increasingly under threat. Specific regulations protecting Indigenous peoples in voluntary isolation have been established in Peru,[400] Bolivia,[401] and Colombia.[402] The number of such territories increased from six to 19 in Brazil, while both Colombia and Ecuador have expanded these areas.[119]

These achievements are undermined by more recent rollbacks in environmental and human rights protections. In Brazil, legislative protections for Indigenous groups have been threatened under the current administration,[403] including the loosening of environmental controls, efforts to weaken the government body responsible for protecting Indigenous lands (Fundação Nacional do Índio, FUNAI), and the introduction of a set of economic initiatives that clash with the strict terms of the Federal Constitution regarding the protection of Indigenous Peoples' rights.[119] In Peru, institutional weaknesses in the Ministry of Culture undermine efforts to enforce the legal framework and timelines for formalizing Indigenous Reserves, revealing the conflicts between different state institutions that push back against social and environmental protections for Indigenous People.

The nominal protection that Indigenous groups have on paper is often not reflected in dynamics on the ground. Indigenous territories and protected areas in the Amazon basin are seeing increased illegal mining along their borders and inside territories themselves. [397] Throughout the Amazon, Indigenous communities have suffered sustained violence and threats, including the death of Indigenous leaders,[404] by groups of small-scale, informal miners. The Brazilian government's decisions to open up Indigenous territory to industrial mining and to legalize small-scale mining on Indigenous lands threaten communities further. Parallel trends are found along the Brazil-Venezuela border, exacerbated by the exodus of migrants from Venezuela looking to mining for their livelihoods. Indigenous territories on both sides have been inundated by thousands of ASM miners, often associated with illegal armed actors.[405,119]

CHAPTER 9.

Conclusion

Progress toward Goals 3 and 4—reducing deforestation from infrastructure and extractive developments, while supporting sustainable livelihoods—is slow. Instead, forests are under threat by an ever-increasing demand for natural resources and different land uses, fueled by global markets, power imbalances, and weak governance. The NYDF goals and the SDGs are fundamentally at odds with an economic system based on the assumption of infinite production and consumption.

Although there are several promising initiatives and examples of progress, we find little evidence of efforts that have successfully addressed deforestation by the combined drivers of infrastructure and extractive industries, nor that by subsistence use. While most efforts targeted at Goal 3 drivers fail to take the problem of deforestation seriously, interventions targeting poverty and deforestation fail to address the full complexity and scale of these interconnected problems.

In the meantime, strong economic and political forces incentivize the destruction of forest at an unprecedented scale. Many of these forces operate at the national level in forest countries, while increasing demand for food and other material demands drives the expansion of infrastructure, natural resource extraction (minerals, metals, but also timber), and other land uses into forests. The richer populations in the Global North, as well as new elites and middle classes in emerging economies benefit from the flow of commodities out of forests that externalize environmental and social costs. The groups most affected by the damage, however—poor populations and vulnerable local communities—are pushed toward the frontier, further into the forest, or to chaotically urbanizing human settlements with a lack of alternative options for local economic development.

While infrastructure development is important for poverty reduction—providing access to education, healthcare, farming inputs, and markets for rural populations—mega-scale investments are often planned with very little attention to the sustainable development of local economies: the primary political emphasis is instead on macro-economic growth and elite investment priorities. Decision-making processes for investments are often obscure; there is limited transparency over the use of safeguards; and we find no evidence for commensurate investments in public services that could mitigate social and environmental costs. In other words, these projects are primarily motivated by creating access and transportation for exploitation rather than connecting the rural poor to basic infrastructure needed to lift them out of poverty.

The world is engulfed in a global pandemic that has quickly evolved into an unprecedented crisis, further exacerbating forest loss. COVID-19 will make the achievement of the NYDF goals even more challenging.

The pandemic, which has already led to an increase in poverty for the first time since 1998,[406] is a threat to forests as loss of incomes and livelihoods is likely to drive further encroachment into forests. Many governments also struggle to address this economic and social crisis, diverting their attention from forest goals that already have little priority. Governments are already rolling back environmental protections to boost their economies, and there is a risk that they promote further infrastructure and extractives investments in forests as a recovery strategy.[114] At the same time, Indigenous peoples and local communities, who have traditionally played an important role in protecting forests, are among the most affected by COVID-19.

The COVID-19 crisis has exposed the vulnerability of our economic and social systems. If we are not successful in mitigating climate change and reducing deforestation, the world will face more crises of this and likely greater magnitude.

The Paris Agreement calls for limiting the increase in global average temperature to 1.5°C by the end of the century. But so far there has been no net progress in reducing GHG emissions. Instead, emissions reached a new record high of 36.7 gigatons of CO_2 in 2019, while the recent decline due to the COVID-19 crisis is likely to be short-lived. The recent

"United in Science 2020" report led by the World Meteorological Organization estimates a 20 percent chance that the global median temperature increase will already exceed the 1.5°C target by 2024.[407]

Much more needs to be done, and much more quickly, to stop climate change. Tackling deforestation is an essential part of the solution. Avoided deforestation in tropical forests alone has a mitigation potential of 3.5 gigatons of CO_2 per year,[408] equivalent to 9.5 percent of 2019 emissions. This climate benefit of forests must be explicitly included in all assessments of the financial and economic viability of large-scale infrastructure and extractives projects and when supporting alternatives to deforestation driven by subsistence use.

Action and policies do not match ambitious high-level goals for sustainable development, climate, and forests. The paradigm of consumption and exploitation is deeply entrenched in our society. If NYDF endorsers and the global community intend to reach Goals 3 and 4, they need to urgently step up their efforts to manage trade-offs and capitalize on synergies between forest protection and sustainable development.

Abbreviations

ACOFOP: Association of Forest Communities of Petén (Guatemala)

AMAN: Indigenous Peoples Alliance of the Archipelago (Indonesia)

AMPB: Mesoamerican Alliance of Peoples and Forests

ASM: Artisanal and small-scale mining

AV: International Articulation of People Affected by Vale

BREECP: Belt and Road Ecological and Environmental Cooperation Plan

BRI: Belt and Road Initiative

CBFM / CFM: Community-based forest management

CEEQUAL: Civil Engineering Environmental Quality Assessment and Awards Scheme

CAFI: Central African Forest Initiative

CAR: Central African Republic

CFI: Cocoa and Forest Initiative

CFEM: Financial Compensation for the Exploration of Mineral Resources

CIAT: International Center for Tropical Agriculture

COICA: Coordinating Body of the Indigenous Peoples' Organizations of the Amazon Basin

COP: Conference of the Parties

COSIPLAN: South American Infrastructure and Planning Council

DRC: Democratic Republic of the Congo

EP: Equator Principles

ESG: Environmental, Social and Governance

ESIA: Environmental and social impact assessment

FCPF: Forest Carbon Partnership Facility

FIP: Forest Investment Program

FPIC: Free, prior, and informed consent

GEF: Global Environment Facility

GRI: Global Reporting Initiative

ICMM: International Council on Mining and Metals

IDB: Inter-American Development Bank

IFC: International Finance Corporation

IFL: Intact forest landscape

ILO: International Labour Organization

IOV: Instituto Ouro Verde

IRMA: Initiative for Responsible Mining Assurance

IPLC: Indigenous peoples and local communities

MBR: Maya Biosphere Reserve (Guatemala)

MDB: Multilateral Development Bank

NDC: Nationally Determined Contribution

NDPE: No Deforestation, No Peat, No Exploitation

NGO: Non-governmental Organization

NTFP: Non-timber forest product

NYDF: New York Declaration on Forests

OECD: Organisation for Economic Cooperation and Development

PADDD: Protected area downgrading, downsizing, or degazettement

PES: Payment for environmental/ecosystem services

(Lao) PDR: Lao People's Democratic Republic

REDD+: Reducing Emissions from Deforestation and Forest Degradation in Developing Countries

RJC: Responsible Jewelry Council

RMI: Responsible Mining Index

RoC: Republic of the Congo

RSPO: Roundtable on Sustainable Palm Oil

SDG: Sustainable Development Goal

SuRE®: Standard for Sustainable and Resilient Infrastructure

TCFD: Task Force on Climate-related Financial Disclosures

TSM: Towards Sustainable Mining

Glossary

Access road: road or throughway constructed specifically to provide access to areas (generally forests) to facilitate an activity such as infrastructure construction or resource (e.g. timber) extraction[409]

Artisanal and small-scale mining (ASM): the licensed or unlicensed extraction of mineral resources by small enterprises, through mechanized mining, or individual miners, to provide some or all of their basic income, possibly through contracts with larger companies[410]

Basic-needs activities: actions taken by poor communities to sustain subsistence (e.g. to procure food, shelter, and cooking fuel) as well as smallholder commercial activities (e.g. market faming, artisanal and small-scale mining, and charcoal production) which provide subsistence-level incomes for practitioners and their families

Biodiversity offsets: interventions in areas outside a project's zone of influence that result in measurable conservation outcomes and are intended to compensate for significant adverse project impacts that cannot otherwise be avoided or restored, such as the restoration of degraded land or the conservation of areas under threat of loss[411]

Deforestation: loss of natural forest as a result of conversion to agriculture or other non-forest land use; conversion to a tree plantation; or severe and sustained degradation [412]

Extractive industries: sectors that rely on the extraction of raw materials such as metals, minerals, oil, natural gas, or sand from the earth[413]

Forest degradation: change within a natural forest ecosystem that significantly reduces its species composition, structure, and/or capacity to provide the full suite of forest ecosystem services and products, such as biodiversity, carbon, or hydrological services[414,415]

Green finance: finance and financial incentives aligned with objectives of conservation, protection, or promotion of the sustainable forest use, including REDD+ investments and results-based payments, carbon markets, debt for climate or forest swaps, and NDC forest bonds, or geared towards the maximization of synergies with development finance and forests, such as alternative livelihood programs or specific activities (e.g. cookstoves programs targeted at regions affected by degradation)[416]

Grey finance: new or continued finance of activities that have no stated objective to positively impact forests but that may have a potential positive or negative impact on forests, depending on the context, design, and implementation of these activities[417]

Infrastructure: structure that provides services and facilitate transportation through physical networks of roads, railways, electrical grids and power generation (e.g. hydropower), and more[418]

Intact forest landscape: unbroken expanse of natural forest landscape and ecosystem, without signs of significant human activity, and having an area of at least 500 km^2 [419]

Large-scale mining: a formal and regulated activity that involves the use of modern industrial-scale technologies to extract and process valuable ore from the ground[420]

Megaproject: massive, complex, and high-budget development projects that may combine multiple types of transportation and energy infrastructure with natural resource extraction, urbanization, and other large-scale development projects[421]

Non-timber forest product: forest product other than wood or timber (e.g, medicinal plants, bush meat, nuts, and fruits)[422]

Outgrower scheme: short-term or long-term formal or informal partnership established between forest companies and grower(s), who may be individuals, groups, or communities, which may offer simple financial returns or multiple benefits to growers[423]

Permanent agriculture: Annual or perennial cropping systems (including most agroforestry systems) where crops are continuously grown on the same parcel of land

Protected area downgrading, downsizing, and degazettement (PADDD): the decrease of legal restrictions that define the number, magnitude and extent of human activities in a protected area (downgrading), the decrease of the size of a protected area due to excision of land/sea area through a legal boundary change (downsizing), or the loss of the legal protection of an entire area (degazettement)[48]

REDD+: the incentive mechanism defined under the UN Framework Convention on Climate Change to "Reduce Emissions from Deforestation and Forest Degradation in developing countries, plus conservation, sustainable management of forests, and enhancement forest carbon stocks" in developing countries

Rehabilitation: as part of mine closure or decommissioning of another development project, the process of restoring degraded cleared ecosystems following exposure. Although 'rehabilitation,' 'reclamation,' and 'restoration' are used interchangeably, rehabilitation does not necessarily imply the return to the pre-disturbance state of the affected ecosystem, but may instead imply putting it to a new or altered use[424,425]

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[426]

Smallholder: small-scale agricultural or forest products producer, distinct from larger-scale producers found in similar contexts. Definitions of smallholder may differ depending on location, land use type, and commodity[415]

Small-scale agriculture: agricultural production distinct from larger-scale production in similar contexts which generally: exhibits a high degree of dependence on family labor; represents a primary source of subsistence or income for the smallholder; has a relatively small land footprint; uses relatively little agricultural inputs and produces generally low yields; faces significant economic and information constraints. Definitions of small-scale agriculture may differ depending on location, land use type, and commodity[415]

Subsistence agriculture: farming in which nearly all of the crops or livestock raised are used to maintain the farmer and the farmer's family, leaving little, if any, surplus for sale or trade

Tree cover: all vegetation five meters or taller with a default canopy density threshold of 25 percent, which may indicate the biophysical presence of trees but may not meet many definitions of "forest"[334]

Tree cover loss: the permanent or temporary removal or loss of trees within a defined area[427]

Woodfuel: any type of wood biomass derived directly or indirectly, at small-scale and via non-mechanized extraction, potentially as a part of the cultivation-fallow cycle for shifting agriculture, from trees and shrubs grown on forest and non-forest land, which may be used for energy production.[428] Includes both charcoal (produced by heating wood with limited oxygen flow to induce pyrolysis) and fuelwood (also known as firewood)

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