Progress on the New York Declaration on Forests

Goal 3 Assessment

Technical Annex to the Five-Year Assessment Report

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Goal 3

Significantly reduce deforestation derived from other economic sectors by 2020

Key messages

- Economic development models that rely on infrastructure development and resource extraction are difficult to reconcile with the need to protect and restore forest areas due to differing priorities amongst key actors.
- Demand for mined materials and oil and gas is expected to significantly grow in the next decades, increasing the risk of forest loss. Meanwhile, intact forest areas in the Amazon, the Congo Basin, and Indonesia are at risk of deforestation and fragmentation due to planned infrastructure development and new mining and oil and gas project developments.
- The trend of changing the status of protected areas to facilitate new infrastructure development continues to place forests at risk.
- Recent years have seen an increase in high-level support for protecting forests and biodiversity from destruction due to economic activities. For example, in November 2018, the UN Biodiversity Conference adopted a long-term strategy to mainstream biodiversity management into economic sectors such as mining, energy, and infrastructure. The World Bank has also developed a Forest-Smart Mining initiative and, in May 2019, announced a Climate-Smart Mining Facility to promote best practices in forest-friendly extraction.
- Communities and local NGOs have teamed up with multilateral organizations to increase awareness on the destruction of forests by mining activities. Often relying on a discourse of rights for indigenous peoples and local communities, these efforts have achieved legal victories in some countries while facing opposition and further threats in many others.

Overview of goal and indicators

Non-agricultural economic activities – such as mining, oil and gas extraction, infrastructure development, and urbanization – can have significant impacts on forests. Goal 3 aims to reduce deforestation from these and other non-agricultural sectors by 2020.

The risks to forests from non-agricultural sectors continue

The direct footprint of mining and oil and gas extraction – i.e. the amount of forest cleared specifically for these activities – is relatively small compared to agriculture or forestry, causing only about seven percent of tropical forest loss.[1] Similarly, direct forest loss from infrastructure has been estimated at only 10 percent of (sub)tropical deforestation.[2] However, each of these sectors can act as a "driver of drivers", making other deforesting activities more feasible and economically viable. For example, as extraction sites are explored and developed, the construction of roads and complementary infrastructure can drive migration and subsequent forest-clearing for agriculture or settlements.[3] Conversely, new highway projects or roads built for other purposes can make low-value, high-volume mining economically viable.[4] Due to these synergies between extraction and infrastructure, the risk of deforestation and degradation greatly increases where concessions for mining, oil and gas, and other non-agricultural commodity extraction are allocated.[5]

Overlaps of extractive concessions and intact and/or protected forest landscapes

A significant portion of the world's forests, including its remaining intact and protected forests, are at risk of loss and degradation from extractive concessions and infrastructure development. Approximately 44 percent of large-scale mines – totaling over 1,500 sites – are located within forests, potentially affecting over a quarter (27 percent) of global forest cover.[a; 6] Over three fourths (77 percent) of forest mines are located in or within 50 kilometers of a protected area.[7] At least 31 percent of Natural World Heritage sites[b] and 19 percent of remaining intact forest landscapes overlap with mining, oil, and gas concessions.[8] In the tropical Andes of Peru concessions for mineral mining, oil and gas, and logging overlap extensively with regional protected areas with high biodiversity value.[9] Mining concessions cover roughly 21 percent of the Amazon Basin (160 million hectares), with a further 14 percent (108 million hectares) under exploration or open for bidding for oil and gas extraction.[10]

Most forest mines are located in northern latitudes and evergreen forests; however, much of the recent increases in forest mining is taking place in tropical forests.[11] Tropical countries with high rates of deforestation like Brazil, the Democratic Republic of the Congo, Zambia, Ghana, and Zimbabwe all rely on mining for a significant share of their GDP,[12] though often few economic benefits return to local populations.[13,14] Meanwhile, forest impacts from mining in these countries can be significant. For example, from 2005 to 2015, almost 1.2 million hectares were lost in the Brazilian Amazon due to mining, accounting for 9 percent of its forest loss.[15] In Ghana, a study of 20 years of land-use change along the Pra River Basin demonstrated a 300 percent increase in gold mining over a 12-year period from 2004-16, contributing directly and indirectly (though displacing cropland) to 20-40 percent loss of forests in the area.[16] The forest impacts of such activities are particularly alarming in countries with high biodiversity and carbon storage in tropical forests.[17]

Extractive development models thrive under political inertia

Despite risks to forests and other natural ecosystems, governments regularly transfer rights to utilize and extract natural resources to private companies, through concessions, to encourage further economic growth.[18] Mining and other extractive industries (e.g. oil and gas) contribute significantly to national economies in many forest countries. In Peru, for example, the extractives sector accounted for over 13 percent of GDP in 2017,[19] while nearly all of the Democratic Republic of the Congo's exports are mined materials.[20] Because of the economic relevance of these sectors, many governments in high forest-cover countries struggle to implement and maintain conservation initiatives and regulations in the face of high opportunity costs.

This continued investment in forest-risk activities can be explained in part by a political and economic inertia that propels governments along pre-determined pathways. These pathways may come in the form of regional energy and infrastructure integration commitments; economic growth policies built around natural resource use and export; and reforms to policy, laws, and regulations to spur investment in previously protected areas.[21] In addition, corruption can be a major driver of political resistance to change.[22]

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[a] Mine sites include both operational and non-operational sites, as well as those under development at the time of analysis. The area of forest "potentially affected" by these mine sites is based on a 50-kilometer buffer zone around each site, the area in which related forest loss is most likely to occur. Analysis based on World Bank. (2019). *Forest-Smart Mining: Identifying Factors Associated with the Impacts of Large-Scale Mining on Forests*.
[b] Natural World Heritage sites are designated "based on criteria that include the scale of natural habitats, intactness of ecological processes, viability of populations of rare species, and rarity, not to mention aesthetic appeal" (via IUCN website, https://www.iucn.org/theme/world-heritage/about).

Efforts to address deforestation are framed around a "mitigation hierarchy"

Action to address the environmental impacts from extractive industries, infrastructure, and other development has increasingly been structured under an approach called the mitigation hierarchy.[23] The mitigation hierarchy follows four steps (**Figure 1**):

(1) Avoid unnecessary impacts

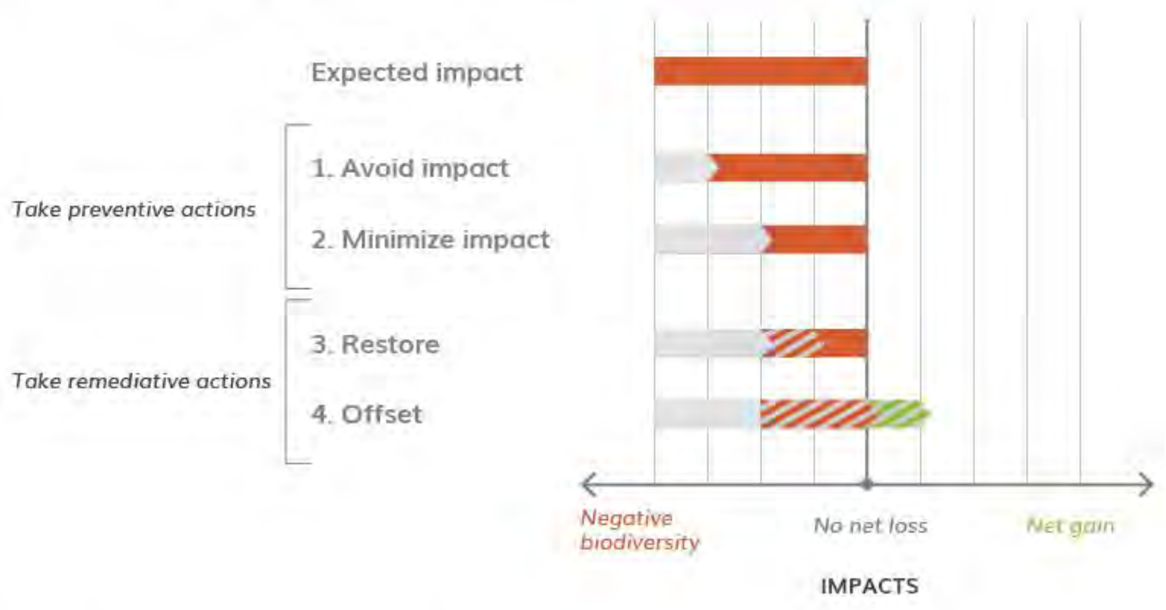
(2) Minimize impacts that cannot be avoided

(3) Restore or rehabilitate impacted areas

(4) Offset any remaining negative impacts through actions in other areas[24,25]

Figure 1.

Illustration of the mitigation hierarchy



Source: Adapted from Forest Trends. (2017). BBOP: The Mitigation Hierarchy. https://www.forest-trends.org/bbop/bbop-key-concepts/mitigation-hierarchy/; and from Ekstrom, J., L. Bennun, and R. Mitchell. (2015). A cross-sector guide for implementing the Mitigation Hierarchy. Cambridge, UK: Cross-Sector Biodiversity Initiative (CSBI).

As the most common and widely accepted decision-making framework for reducing ecosystem impacts from extractive and infrastructure projects, the mitigation hierarchy is commonly applied in Environmental Impact Assessments for project licensing and loan applications. The mitigation hierarchy is often employed with the aim of achieving "no net loss" or "net gain" of biodiversity within project impact areas (**Box 1**).[26] The mitigation hierarchy may also be applied at broader scales, beyond individual project assessments, and may be most effective when applied at regional scales.[27]

Assessing progress

As aggregate data on progress towards Goal 3 continues to be limited, this assessment covers recent developments in national policies and public and private initiatives that aim to reduce the forest impacts of non-agricultural economic sectors. We will develop an assessment framework for Goal 3 in the context of our 2020 Goal 3 and 4 focus report.[c]

For the purposes of this assessment, we consider large-scale mining and extractive activities under Goal 3, while artisanal and small-scale mining is covered under Goal 4 as a basic-needs activity. However, in practice, it is challenging to disaggregate these forest losses across these scales of activity due to the often overlapping activity areas, and the relationship of small-scale miners to larger mining "syndicates".[28] In general, we address large-scale activities undertaken by companies and governments under this Goal 3 assessment, while smallholder commercial activities are considered under Goal 4.

Box 1. Biodiversity management

Since the adoption of the Convention on Biological Diversity in 1992, biodiversity management has been essential for ensuring the sustainability of development projects. One important measure to monitor a project's impact on biodiversity is habitat loss and degradation, which in forest areas corresponds closely to forest loss and degradation. In this framing, forest protection falls under the umbrella of biodiversity management (i.e. zero-deforestation commitments are considered a subset of "no net loss" (see definitions below)[29]). In addition, biodiversity management includes consideration of protected areas, habitat fragmentation, and impacts on endangered species. Early application of the mitigation hierarchy is considered essential for achieving "no net loss" or "net gain" in the biodiversity of affected areas. At the conference of the parties of Convention on Biological Diversity in November 2018, parties adopted a long-term strategy to mainstream biodiversity into economic sectors such as mining, energy, and infrastructure.[30]

Key definitions in biodiversity management (adapted from the Cross-Sector Biodiversity Initiative):[31]

- **No net loss** – No net loss refers to a performance target for development projects, wherein project-related impacts on biodiversity are balanced by preventative and remediative measures taken through application of the mitigation hierarchy, so that measures of biodiversity like species population and habitat extent are the same at the end of the project as at the beginning.
- **Net gain** – Net gain refers to a performance target wherein project-related biodiversity impacts are more than compensated for by preventative and remediative measures, so that measures of biodiversity are greater at the end of the project than at the beginning.
- **Offsets** – Offsets are actions applied to areas outside the project's area of influence that result in measurable conservation outcomes. Offsets are intended to compensate for significant, adverse project impacts that cannot otherwise be avoided or restored. In general, biodiversity offsets work by either restoring degraded land (see Goal 5) or conserving areas under threat of loss (see Goal 1)

Findings

Mining and extraction activities projected to increase with demand

As the world becomes more urbanized and industrialized, the demand for products from mining and extraction activities continues to increase. Consumption of goods that rely on mineral- and metals-intensive technology shows no signs of slowing.[32] The extraction of raw materials, including fossil fuels, mined minerals, and metals, is expected to almost double in the next forty years – despite an expected gradual decoupling of materials use from economic growth.[33]

A global shift to low-carbon technologies is estimated to require exponential amounts of key minerals such as lithium, graphite, and nickel. This is because renewable energy creation and storage technologies – solar panels, wind turbines, and high-capacity batteries – all require mined minerals, and in fact may require more of these materials than fossil fuel-based systems.[34] Therefore, global

[c] In 2020, the NYDF Assessment Partners will focus on Goal 3 as part of our annual in-depth assessment. Together with an expert working group, we will revise the assessment framework to allow for a deeper tracking of progress in line with previous in-depth assessments. In this 2019 update, we present provisional criteria and indicators, which will be considered and revised with the working group on Goals 3 and 4 over the next year. If you are a researcher or member of an organization working on the forest impacts of mining, oil and gas, infrastructure, and/or other extractive industries, and are interested in contributing to the 2020 in-depth assessment of Goal 3, please write to us through our Contact Page.

demand for mined minerals is expected to grow even more as economies transition to renewable energy to meet their targets under the Paris Agreement.[35] The geography of deposits of these high-value metals combined with policies favorable to mining expansion may drive exploration into remote forest areas, bringing roads and workers that subject the forest to further risk of loss.[36]

Even with the expected global transition to renewable energy, the demand for fossil fuels continues to grow and place forests at risk through new site and transport development. Since a near plateau in 2015, the growth in worldwide energy demand has increased sharply to a 2.3 percent growth in 2018, with 70 percent of new energy demand met by fossil fuels.[37] Coal mining concessions, specifically, overlap with almost 12 million hectares of forest – an area the size of Portugal.[38] In 2014, over 43 million hectares of the western Amazon were covered by oil and natural gas concessions, with a further 30 million hectares designated for future leasing and extraction, totaling an area larger than the state of Texas.[39]

Infrastructure booms lead to degradation and forest fragmentation

Many forest-country governments continue to rely on major regional development projects, which link energy and transportation infrastructure with the development of extractive industries to spur economic growth. These large-scale economic development projects can have a significant negative impact on forests.[40] For example, almost 120,000 hectares of protected area and over 240,000 hectares of intact forest in the Amazon have been directly impacted by transmission lines alone.[41] Similarly, a recent assessment of planned road and railway development in the Kalimantan region of Indonesia found that 237,000 hectares of intact forest will be fragmented because of the transport lines. A further 400,000 hectares will be subjected to increased threat of degradation from migration and smaller-scale forest clearance leading to an overall decline in forest connectivity.[42] New and planned road construction will also cut through large swaths of primary forest in the Amazon, the Congo Basin, and Indonesia's New Guinea forest.[43] Furthermore, project planners often fail to adequately acknowledge the rights of local communities and accurately assess the expected ecological and social impacts of the project (**Box 2)**.[44]

China's Belt and Road Initiative (BRI) stands as an effort of unprecedented scale to develop new transportation, energy, communications, and economic infrastructure worldwide. The full scale of the BRI's current and future environmental impacts are unknown due to limitations in assessing such large-scale projects, as well as limited information on which Chinese-backed projects actually qualify under the BRI.[45] Assessing, and thereafter mitigating, expected impacts will require systematic assessments far beyond the project-level. While China has policies in place to reduce the environmental, impacts of new construction, specifically impacts on forest and biodiversity, their effectiveness often depends on the capacity and enforcement of host country governments, which may be limited.[46] To reduce forest impacts from the totality of BRI projects the Chinese government will need to strengthen its mandates that require Chinese companies operating internationally to comply with China's own sustainable development guidelines.[47]

Trend of backtracking on environmental advances

One of the key strategies to reduce the environmental impacts of large-scale extractive, energy, and infrastructure projects is to avoid "the first cut", i.e. to plan construction to avoid penetrating intact forest areas.[48] However, rather than respecting protected area status to avoid "first cuts", there has been a recent uptick in changing the status of protected areas to facilitate new construction.[49] Such actions – known as protected area downgrading, downsizing, and degazettement (PADDD) – can sometimes be implemented in an effort to improve the effectiveness of the protected areas that remain.[50] However, in other cases, the reclassifications fail to incorporate local opinion and lead directly to increased forest loss.[51]

A significant proportion of PADDD in Brazil has been implemented to facilitate the construction of new energy infrastructure such as hydropower.[52] Meanwhile, changes to the mining code in Brazil could bring 9.8 million hectares of protected area under new mining project development by 2025.[53] More

Box 2. Case Study: An Indonesian megaproject and the slow implementation of reforms

The dynamic tension between conservation and economic development is playing out in one of the last expanses of primary natural forest in Indonesia. The Indonesian government continues to develop its plans for a 4,000 kilometer highway and economic development "corridor" that will pass through the intact primary forests of Papua, in line with its national development agenda.54 Over 200 kilometers of this highway will transect the Lorentz National Parkd and the Enarotali Nature Reserve, travelling through almost 50,000 hectares of mining concessions that also overlap Lorentz.

Though progress has been made in legally recognizing indigenous and local communities' rights to control forested land in this region, implementation of the processes to recognize these rights is slow. Efforts to implement centralized mapping – such as the One Map initiative described in the 2018 NYDF Progress Assessment – and improved indigenous land tenure recognition have been subject to delay and have often been left incomplete. Fewer than one third of Papua's maps had been synched with the One Maps as of mid-2018, compared to an average of over 80 percent for other regions; and the bulk of customary land claims in Papua have yet to be processed. Though these improvements have been passed on paper, the lack of sufficient and timely implementation means that local communities are unable to assert their rights over these natural forests (see Goal 10). In order to effectively safeguard forests, technical innovations such as OneMap need to be supported by sufficient political pressure to overcome the inertia and conflicting interests that continue to promote specific models of growth.

recently, new Brazilian administration has announced its intention to subject over 60 protected areas to PADDD expressly to facilitate further infrastructure construction.[55] Though tools such as environmental impact assessments (**Box 3**) are available to limit the environmental harm from the projects, their efficacy depends on strong governance that respects, rather than retracts, environmental regulations and protections.

Box 3. Opposing priorities may limit the proper implementation of mitigation tools

Environmental Impact Assessments (EIAs) are an imperfect but important tool for implementing the mitigation hierarchy. The EIA is the main regulatory tool to assess the merits of development projects. When rigorously designed, conducted, and enforced, with early use of the mitigation hierarchy, EIAs can be an effective measure for avoiding and reducing the forest impacts of infrastructure and extractive projects. Effective use of this tool requires firm governance and often increased capacity in regulating agencies[56] (see **Goal 10**). EIAs are generally most effective when the government agencies responsible for regulating and validating them are separate from those representing the interests of industry; i.e. when the environment agency or ministry is separate from that which governs natural resources and industry.[57]

However, recent research has shown that EIAs often fail to present the true anticipated impact of a project. Numerous examples in the Brazilian Amazon illustrate this point, including a highway that was estimated to lead to no net increase in forest loss,[e] a hydroelectric dam whose EIA contradicted a series of 28 scientific studies estimating additional negative impacts,[58] and a gold mine whose EIA had significant data omissions. [59] Often, EIAs in the mining sector only assess the impact of the mine's direct footprint without considering secondary impacts.[60] In order to be effective at reducing project impacts, EIAs must be complemented by landscape-scale strategic environmental assessments and cumulative impact assessments designed to include the knock-on effects of project-associated infrastructure and the interaction of different projects in the region.[61]

EIAs also inform the creation of environmental monitoring practices throughout the development and lifetime of infrastructure projects. A recent review of 236 flora and fauna monitoring practices in Minas Gerais, Brazil, found that these practices met only 32 percent of best-practice technical requirements, despite fulfilling all conditions for licensure.[62] Thus, the EIAs and subsequent environmental reporting generated little useful data on the actual impact of projects on biodiversity and other environmental indicators.

[d] Lorentz National Park is a UNESCO World Heritage site and "the only protected area in the world to incorporate a continuous, intact transect from snowcap to tropical marine environment, including extensive lowland wetlands" (https://whc.unesco.org/en/list/955).

[e] "For example, the environmental-impact assessment for Brazil's 900-kilometer-long BR-319 highway, which is slicing into the heart of Amazonia, concluded that the project would cause no net increase in deforestation. Yet independent analyses suggest that it will provoke dramatic acceleration of forest loss — an extra 5 million to 39 million hectares by mid-century (C. D. Ritter et al. (2017). Biol. Conserv. 206, 161–168)."

Limited progress in effectively implementing financial sector safeguards for forests

Coordinated efforts by financial institutions, the public sector, and civil society to reduce deforestation from mining, oil and gas, and other extractive sectors are not as advanced as those to reduce agricultural forest loss. A 2010 report found that banks had only a limited understanding of the mitigation hierarchy and therefore applied it ineffectively in assessing projects for investment.[63] Since then, leadership by the International Finance Corporation has led to increased application of lending standards, including verified implementation of the mitigation hierarchy, as best practice for financial institutions.[64] However, financial institutions still have a long way to go toward effectively incentivizing forest-smart mining (**Box 4**).[65]

Box 4. Forest-Smart Mining and the World Bank

Since 2017, the World Bank-hosted Program on Forests (PROFOR) has spearheaded the Forest-Smart Mining Initiative – an effort to better identify, understand, and mitigate the associated risks and impacts of extractive industries on forests. According to PROFOR, forest-smart mining recognizes the relationship between forests and land use, integrates a landscape approach that minimizes adverse effects on forests, and targets interventions that integrate these relationships and approaches. Since its inception, the initiative has published three Forest-Smart Mining reports that constitute the most comprehensive research conducted into the forest impacts of the mining sectors and include a worldwide look at mining practices currently taking place in forested areas. These reports found no examples of mining operations that were fully “forest-smart”. In May of 2019, the World Bank launched the Climate-Smart Mining Facility, a multi-donor trust fund, whose mandate, in part, includes reducing mining-related deforestation (see **Goal 8**).[66]

Though investors in extractive projects have largely declined to prioritize forest impacts in their investment decisions, recent investor actions regarding tailings dam[f] safety demonstrates the power of the financial sector to inform sector practices. The past five years have seen an increase in tailings dam collapses around the world.[67] A 2019 tailings dam rupture in the Minas Gerais region of Brazil, for example, resulted in over 200 deaths and the destruction of at least 269 hectares of native Atlantic Forest.[68; 69] After the dam collapse, the institutional investors demanded that hundreds of mining companies fully disclose safety details on their facilities.[70] The power to demand disclosure and transparency could be harnessed to increase the adoption and application of forest-specific safeguards to ‘green’ the currently ‘grey’ investments on mining and extraction (see **Goal 8**).

Renewed efforts around transparency and sustainability in mining, but impact remains to be seen

Achieving a reduction in forest loss and degradation from extractive industries will require the coordinated efforts of governments and private-sector companies across borders. Private-sector industry-specific and multisector sustainability and transparency initiatives for mining and mineral-dependent industries continue to develop since the publication of our 2018 assessment (**Table 1**). For example, the Global Reporting Initiative has adopted updated and streamlined reporting guidance for companies; this includes required reporting on operation in protected areas, biodiversity impacts, and mitigation measures.[71] In 2019, CDP added questionnaires on mining and forests to its disclosure surveys for companies and governments. While in the early stages, such opportunities for transparency and disclosure provide important levers to promote change in the mining sector.[72]

Five years ago, no sustainability certifications were available for the mining sector. Now, new industry-led and cross-sectoral certification schemes have recently been and are about to be launched. The Initiative for Responsible Mining (IRMA) released its Standard for Responsible Mining in 2018, regulating the production of raw materials.[73] Complementing IRMA and covering downstream processors in the steel industry, the latest draft of the ResponsibleSteel Standard completed its last public review period in April 2019, with final approval expected in September 2019.[74] The resulting certifications from each standard will allow companies involved in mining and raw materials sourcing to demonstrate compliance with a series of environmental and social sustainability criteria, including

[f] Tailings dams are one of the most common structures for storing mining waste.

application of the mitigation hierarchy. The first certifications according to these standards will likely be granted by the end of 2019.[75] Meanwhile the Aluminium Stewardship Initiative (ASI) has also certified a number of mining operations according to its ASI Standards and Certification program, which was launched in December 2017.[76] At least 18 companies meet the ASI Performance Standard, which includes considerations of biodiversity and greenhouse gas emissions.

Table 1. Selected private-sector initiatives to improve transparency and sustainability of mining and related industries

Reporting and transparency	**CDP**	CDP has now launched its new disclosure framework for the mining sector, covering biodiversity and forests aspects. Over 200 companies with revenues dependent on coal extraction, ore mining, mined metals, or minerals were invited to disclose to CDP. This includes ICMM members such as Glencore, BHP Billiton, Mitsubishi Materials Corporation, and Vale. It is expected that the disclosed data will help investors and other data users understand the risks and opportunities different companies are facing to inform relevant action. The questionnaire and its guidance are available on CDP's website. The disclosure period runs until the end of July 2019.
	Global Reporting Initiative Sustainability Reporting Standards	Global Reporting Initiative (GRI) launched its first sustainability reporting framework in 2000. Since then its guidelines have underpinned many companies' corporate social responsibility (CSR) and environmental, social, and governance (ESG) reporting. The latest version of GRI's framework – its Sustainability Reporting Standards – launched in 2018, has updated and streamlined this reporting guidance for companies. The guidance includes required reporting on operation in protected areas, biodiversity impacts, and mitigation measures. Almost three fourths of mining companies who have released a sustainability report have used or cited GRI's framework.
Standards and certification	**The Initiative for Responsible Mining Standard for Responsible Mining**	The Initiative for Responsible Mining (IRMA) released its Standard for Responsible Mining in 2018, regulating the production of raw materials. Certification based on this standard will be structured as a tiered system to encourage continual improvement across mine sites and companies. Mines may conduct self-assessments against the Standard, which will be verified by auditors before certification. Companies may add their own mine sites to the Responsible Mining Map, though as of July 2019, only three companies had submitted one mine each.[77]
	ResponsibleSteel Standard	The ResponsibleSteel Standard, which complements IRMA to cover downstream processors in the steel industry, is expected to be approved in September 2019. The standard outlines 12 principles covering business processes from sourcing to distribution, and considerations from human rights to environmental impacts. Importantly, the Standard is aligned with both IRMA and the Mining Association of Canada's standards to avoid duplicated efforts and conflicting expectations. The first audits and certifications according to the Standard may happen by the end of 2019.
	Aluminium Stewardship Initiative Standards and Certification program	The Aluminium Stewardship Initiative (ASI) first released its ASI Performance Standard in 2015, which includes environmental, social, and governmental performance requirements. Since the ASI Standards and Certification program was launched in December 2017, at least 18 companies have been certified against the Performance Standard. [78]

Countries and companies increasingly rely on offsets to compensate for biodiversity losses

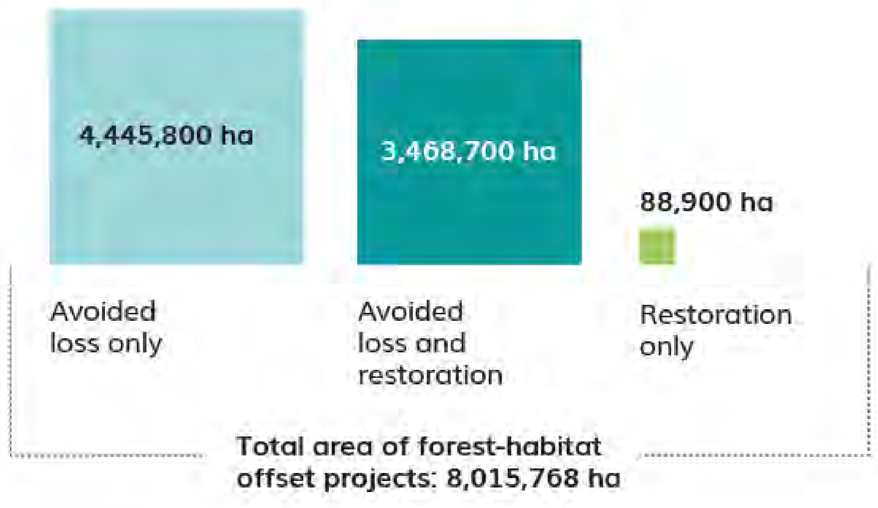
As the fourth step in the mitigation hierarchy, implementing biodiversity offsets (see **Box 1**) should be considered a measure of last resort.[79] However, recognizing that the first three steps of the mitigation hierarchy – to avoid, minimize, and remediate impacts – are often applied insufficiently,[80] offsets are rapidly growing as a response to the threat of biodiversity loss from development projects.[81]

Biodiversity offset policies have increasingly been adopted by tropical forest countries.[82] Overall, the number of countries with biodiversity offset policies almost doubled, from 60 in 2000, to 115 countries in 2017.[83] The Global Inventory of Biodiversity Offset Policies identifies 43 countries where offsets are required by law as part of the EIA and project permitting process. Voluntary offsetting is allowed in the regulations of 64 countries. However, to be effective and long-lasting, offsets need to be implemented in a strong enabling environment, with legislation ensuring the long-term protection of offset areas, a coherence of priorities across government agencies, and participatory mechanisms.[84]

Biodiversity offset projects have been implemented by companies on over 15 million hectares across 37 countries where offset policies are in place.[85] The vast majority of these projects (99.7 percent) were implemented because of government regulations rather than voluntary corporate commitments or lender safeguards.[86] However, the average size of policy-driven projects (4,850 hectares) is dwarfed by that of lender- or corporation-mandated projects (310,040 hectares). Over half of the offset area is in forest habitat, totaling 8 million hectares, most of which was conserved (avoided loss) rather than restored (**Figure 2**).[87] However, considering the scale of cumulative forest loss associated with infrastructure and extraction and questions of ecological effectiveness and longevity, these implemented projects do little to reduce overall forest impacts.[88]

Figure 2.

Area of biodiversity offset projects in forests – by avoided loss, restoration, or both – in hectares



Note: Findings based on data from 162 biodiversity offset projects in forest habitats with area data reported, across an analysis of 37 countries. Total area of forest-habitat offset projects includes projects that were not classified by offset activity.

Source: Climate Focus analysis based on Biodiversity Offset Database included as Supplementary Data 1 by Bull, J. W., & Strange, N. (2018). The global extent of biodiversity offset implementation under no net loss policies. Nature Sustainability, 1(12), 790. https://www.nature.com/articles/s41893-018-0176-z

Popular movements pushing back against extractive growth models

A long history of community-led protests against extractive growth models and infrastructure development has informed recent growing awareness of these fights at the international level. Much of this opposition relies on a discourse of rights – land rights and the right to self-determination – for indigenous peoples and local communities. This message is increasingly projected to a world stage through international forums and cross-scalar alliances with international organizations.[89]

Indigenous peoples and local communities have varying motivations for opposing development on their lands. Most protests are based on concern for the environmental and social impacts of extractive activities, including concerns for water and forests as well as human health and local economic opportunity. In many cases, communities simply wish to ensure the application of safeguards and the fair distribution of benefits from development, while other efforts seek different development models altogether.[90] Opposing extractive industries can be particularly dangerous for forest community members. As findings from Global Witness demonstrate, the mining and extractives sectors have been associated with the highest number of killings of environmental defenders, with 43 documented deaths in 2018. Conflicts over water sources and hydropower led to a further 17 killings last year.[91]

Indigenous communities in Ecuador have recently won major court cases against governments and extractive companies, building on a long tradition of legal advocacy for community rights to protect their environment. In October 2018, the Cofán community of Sinnagoe won their lawsuit to cancel mining concessions in their territory because community consultations were never conducted.[92] Similarly, 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. These legal victories reinforce the importance of free, prior, and informed consent and communities' right to self-determination[93] (see **Goal 10**).

Data development

CDP States and Regions Questionnaire's Forest Module: In addition to new survey questions on forests and biodiversity for mining companies (see **Table 1**), CDP has invited disclosures in these areas from state and regional governments. The collected data will showcase how those actors are managing deforestation and forest degradation resulting from mining and other non-agricultural drivers. Over 300 state and regional governments from select countries have been invited to disclose. The countries were selected if they or at least one of their subnational governments had endorsed the NYDF. The States and Regions questionnaire and its reporting guidance is available on CDP's website; the first disclosure period ran through July 2019.

Endnotes

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