



# COP Presidency the COP 30 Roadmap on Halting and Reversing Deforestation and Forest Degradation by 2030.

Submission to the UNFCCC by [Earth Insight](#)  
[Map annex](#)

Halting and reversing deforestation and forest degradation by 2030 requires addressing a set of interlinked structural barriers across economic, governance, ecological, and social systems. These barriers are mutually reinforcing and must be tackled through integrated approaches that combine rights-based governance, place-based protection, and systemic economic and financial reform. These dynamics not only drive forest loss but also undermine climate mitigation and adaptation efforts, given the central role of forests in carbon storage, climate and water cycle regulation, and resilience.

**a) What are the most critical barriers — whether physical, economic, financial, institutional, technological or social — preventing the halting and reversing of deforestation and forest degradation?**

**1. Economic, financial and fiscal barriers: Structural dependence on Extractive Revenues and Land Use Expansion**

Many of the tropical forest countries with the highest deforestation rates, including [Brazil, the Democratic Republic of Congo, Indonesia, Bolivia, Peru, Colombia, and Cambodia](#), are fiscally dependent on revenues from extractive industries (oil and gas, mining, etc.), large-scale agriculture, and other associated land-use activities that overlap with mature rainforests that are especially important for biodiversity, carbon storage, and water supply. These revenues from extractive activities are often essential for financing public services, infrastructure, and macroeconomic stability, including servicing debt, and currency stabilization.

This creates a structural barrier and a disincentive for forest protection: governments reliant on concession fees, royalties and export earnings from extractive industries within forested areas face significant pressure to maintain or expand extractive activities, even when they overlap with ecologically critical areas and threaten biocultural assets. In the context of fiscal stress and geopolitical volatility, this pressure intensifies, accelerating the development of new resource frontiers.

At the same time, financial systems remain misaligned with the possibility of halting deforestation. [For every dollar invested in protecting nature, approximately US\\$30 are spent on activities that drive its destruction](#). In 2023 alone, an estimated US\$7.3 trillion flowed into nature-negative sectors, including fossil fuel subsidies and high-impact industries such as energy and utilities, while only around US\$220 billion supported nature-based solutions, with private finance contributing just US\$23 billion (UNEP, 2026). Capital continues to flow disproportionately toward extractive industries, large-scale agriculture, and associated infrastructure, while sustainable alternatives, such as social bioeconomy and ecosystem restoration, remain underfunded and underdeveloped. Limited access to finance, weak local and regional markets, logistical barriers, and lack of value addition further constrain community-based economies. As a result, persistent social inequalities and a lack of livelihood alternatives can push local populations toward activities associated with deforestation and illegal economies.

Weak local and regional market systems further constrain sustainable and equitable forest economies. Value chains are largely oriented toward global commodity markets that amplify unjust distribution of benefits, while limiting local value addition, weak infrastructure, transportation and logistics, and barriers such as limited access to information, technical capacity, finance, and markets. This limits the ability of forest-based products to capture higher value, undermines community livelihoods, and reinforces dependence on extractive or deforestation-linked activities. [Weak regulation and poor coordination with local authorities](#) further erode sustainable practices and increase the risk of overexploitation (Jarrett, 2025).

These dynamics are compounded by public policies, subsidies, and investment flows that continue to favor extractive industries and large-scale commodities, prioritizing short-term economic returns over long-term ecological stability. Especially as the global energy transition creates demand for new natural resources, this expansion is too often framed as necessary, introducing new and compounding pressures on forests and Indigenous territories.

## 2. Physical and Environmental Barriers: Industrial Expansion into Forest Ecosystems

A key physical and environmental barrier to halting and reversing deforestation is the ongoing expansion of industrial activities into increasingly intact and high-integrity forest ecosystems, including fossil fuel development, mining, industrial agriculture, logging, and associated infrastructure. These activities are directly fragmenting forests, degrading ecosystem integrity,

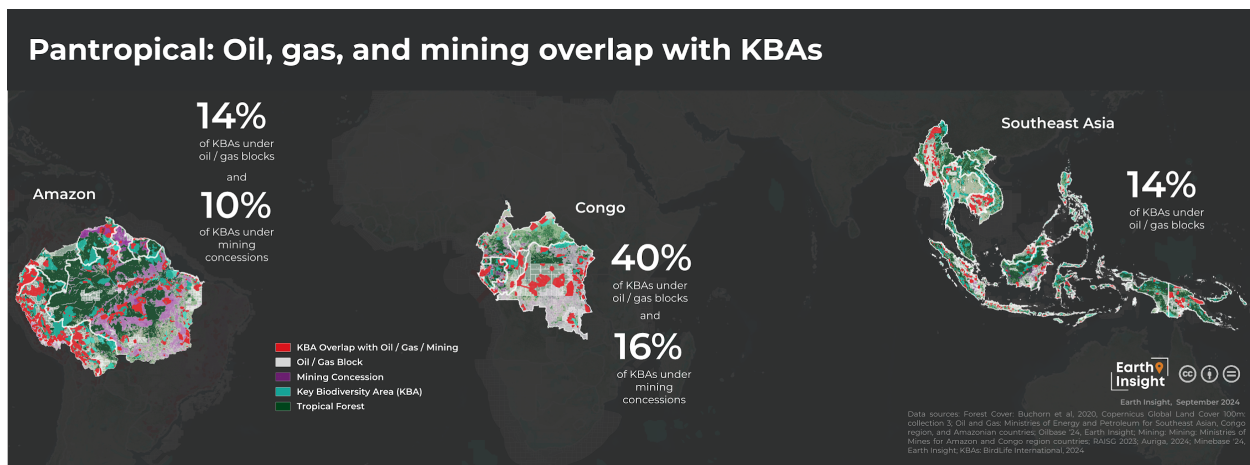
and weakening the ecological functions upon which climate stability, biodiversity, and human livelihoods depend.

Tropical forests function as highly interconnected systems that regulate climate and hydrological cycles at multiple scales. They recycle approximately 30–50 per cent of rainfall and generate atmospheric moisture flows that influence precipitation patterns across regions and continents ([SPA, 2025](#)). In the Amazon, these processes sustain interconnected biomes and economies, including the Pantanal, La Plata Basin, and Orinoco Basin, through complex hydroclimatic linkages with the Andes. [The Andean–Amazon system](#) is particularly interdependent, with reciprocal exchanges of water, sediments, and nutrients that sustain both ecological and human systems ([SPA, 2025](#)).

Nonetheless, the interdependence between large tropical forest systems and other biomes remains underrecognized. Moreover, there is insufficient agreement on and coordinated action around tipping point thresholds, including the need to maintain approximately 75% forest intactness in the Amazon and Congo basins ([IUCN, 2025a](#); [IUCN, 2025b](#)). These circumstances create significant barriers to mobilizing sufficiently ambitious and coordinated action to halt and reverse deforestation beyond national borders.

In this context, and in the absence of decision-making frameworks that fully account for these systemic dynamics, the expansion of industrial activities continues to proceed at scale, further exacerbating these risks. Across tropical regions, extractive and industrial concessions overlap with primary forests, protected areas, Key Biodiversity Areas (KBAs), and Indigenous and local community territories. For example, [oil and gas blocks alone overlap with approximately 180 million hectares of tropical moist forest across the Amazon, Congo Basin, and Southeast Asia](#) (Earth Insight, 2024), with similarly significant pressures from mining, logging, and agricultural expansion.

The development of these extractive industries creates direct and compounding physical pressures. Infrastructure such as roads, pipelines, and extraction sites fragments habitats, accelerates deforestation, and opens previously intact areas to further encroachment while intensifying social inequality. These processes degrade ecosystem integrity and undermine essential functions, including carbon storage, water regulation, biodiversity conservation, and ecological connectivity. Globally, [at least 918 protected areas globally host ongoing or planned fossil fuel extraction](#) (Earth Insight, LINGO, WCPA, 2023), while [518 Key Biodiversity Areas, representing approximately 18% of their area in tropical regions, overlap with active or potential oil and gas blocks](#) (Earth Insight, 2024).



*Oil, gas, gas and mining concessions overlap with 180Mha of intact tropical forest and 518 KBAs across the Amazon, Congo region, and Southeast Asia (Earth Insight, 2024).*

This expansion is enabled by decision-making systems across policy, planning, and finance that do not adequately account for ecological interdependence or tipping point thresholds, that instead allow for continued industrial encroachment into high-integrity forest ecosystems. As a result, cumulative pressures are pushing critical forest basins toward ecological thresholds. Scientific evidence indicates that forest ecosystems such as the Amazon and Congo require approximately 75–80% intactness to maintain stability; continued fragmentation and degradation are increasing the risk of systemic disruption ([IUCN, 2020](#); [IUCN, 2025a](#); [IUCN, 2025b](#)).

As these pressures intensify, they are already contributing to the destabilization of forest systems, increasing the frequency and severity of drought–heat events, reducing river connectivity, and undermining food and water security for forest-dependent communities ([SPA, 2025](#)).

Taken together, the direct physical encroachment and cumulative impacts of industrial expansion in high-integrity forests, reinforced by decision-making systems that fail to reflect ecological limits, constitute a fundamental barrier: without addressing these dynamics, efforts to halt and reverse deforestation will remain structurally constrained.

### 3. Institutional and Governance Barriers: Fragmented and Uncoordinated Governance

Governance fragmentation across local, national, and international levels, combined with a lack of spatially grounded approaches, undermines coherent, rights-based, and ecosystem-aligned action to halt deforestation:

- At the local level, a key governance barrier lies in the limited formal recognition of Indigenous Peoples’ and local communities’ (IP&LCs) territorial rights and governance systems, as well as insecure land tenure across many critical forest areas. In many

tropical forest countries, autonomous Indigenous and community governance and land management systems remain insufficiently recognized in legal and institutional frameworks, despite playing a central role in effective territorial management, deforestation control, and monitoring. IP&LC governance models, grounded in Indigenous knowledge systems, embed sustainable territorial management practices that support ecosystem integrity, biodiversity conservation, and the maintenance of high levels of forest cover. As a result, Indigenous Territories (ITs) have proven highly effective in maintaining ecological connectivity. For nearly 40 years, the reduction or [loss of ecological connectivity within Indigenous Territories and Protected Natural Areas has remained below 10%](#) in both cases. Alongside Protected Areas, these Indigenous governance systems prove to be highly effective in preserving structural and functional connectivity ([ANA and RAISG, 2025](#)). However, the lack of formal recognition and legal tenure security undermines the legitimacy of these governance systems, exposes them to external pressures, and increases risks of conflict and local political instability.

- At the national level, fragmentation across sectoral governance systems further constrains effective action. The separation of fossil fuel, mining, agriculture, and forest governance frameworks disincentivizes coherent and integrated policy responses to deforestation. Decisions related to trade, taxation, industrialization, energy investment, and land use are often taken in silos, with limited alignment with forest protection and climate commitments. Policy instruments such as Nationally Determined Contributions (NDCs) and National Biodiversity Strategies and Action Plans (NBSAPs) frequently lack coherence and are not systematically integrated into broader economic and development planning, nor taken to full implementation by national authorities in effective coordination across portfolios and sectors.
- At the international level, the absence of a sufficiently coherent and integrated framework linking energy transition, biodiversity, and forest protection with climate mitigation and adaptation frameworks and measures further exacerbates these challenges. Competitive economic pressures continue to incentivize short-term exploitation of forest resources, even where such pathways entail significant long-term risks, including stranded assets and irreversible ecological damage. These dynamics undermine critical ecosystem services, including carbon storage and water cycle regulation (atmospheric and terrestrial).
- This institutional fragmentation is further compounded by a spatial governance gap. Most climate and biodiversity frameworks operate primarily at national or global scales, without the place-based specificity required to address localized drivers of deforestation and degradation through effective territorial governance systems. As a result, decision-making frameworks often fail to effectively prevent or manage specific extraction and infrastructure projects in ecologically critical areas.

Taken together, these barriers reflect a systemic misalignment between current economic, governance, and decision-making systems and the ecological realities and biocultural assets of

forest ecosystems, requiring coordinated and structural responses across scales.

**b) What potential levers, whether economic, financial, institutional, social or technological, exist for accelerating the implementation of the commitment to halt and reverse deforestation and forest degradation?**

**1. Governance Lever: Indigenous Peoples' and local communities' governance delivers the strongest outcomes**

A growing body of experience and research across tropical forest regions demonstrates that one of the most effective levers for halting deforestation and maintaining forest integrity is the recognition and implementation of Indigenous Peoples' and local communities' (IPs and LCs) rights, governance systems, and territorial authority ([Fa et al, 2020](#); [Dawson et al., 2021](#)).

IPs and LCs are essential to achieving forest, climate, and biodiversity goals, yet their territories face increasing pressure from extractive expansion:

**Amazon:** ~31 million hectares of Indigenous territories overlap with oil and gas blocks; 9.8 million hectares with mining

**Congo Basin:** ~38% of community forests overlap with oil and gas blocks.

**Indonesia:** ~18% of Indigenous territories overlap with timber concessions.

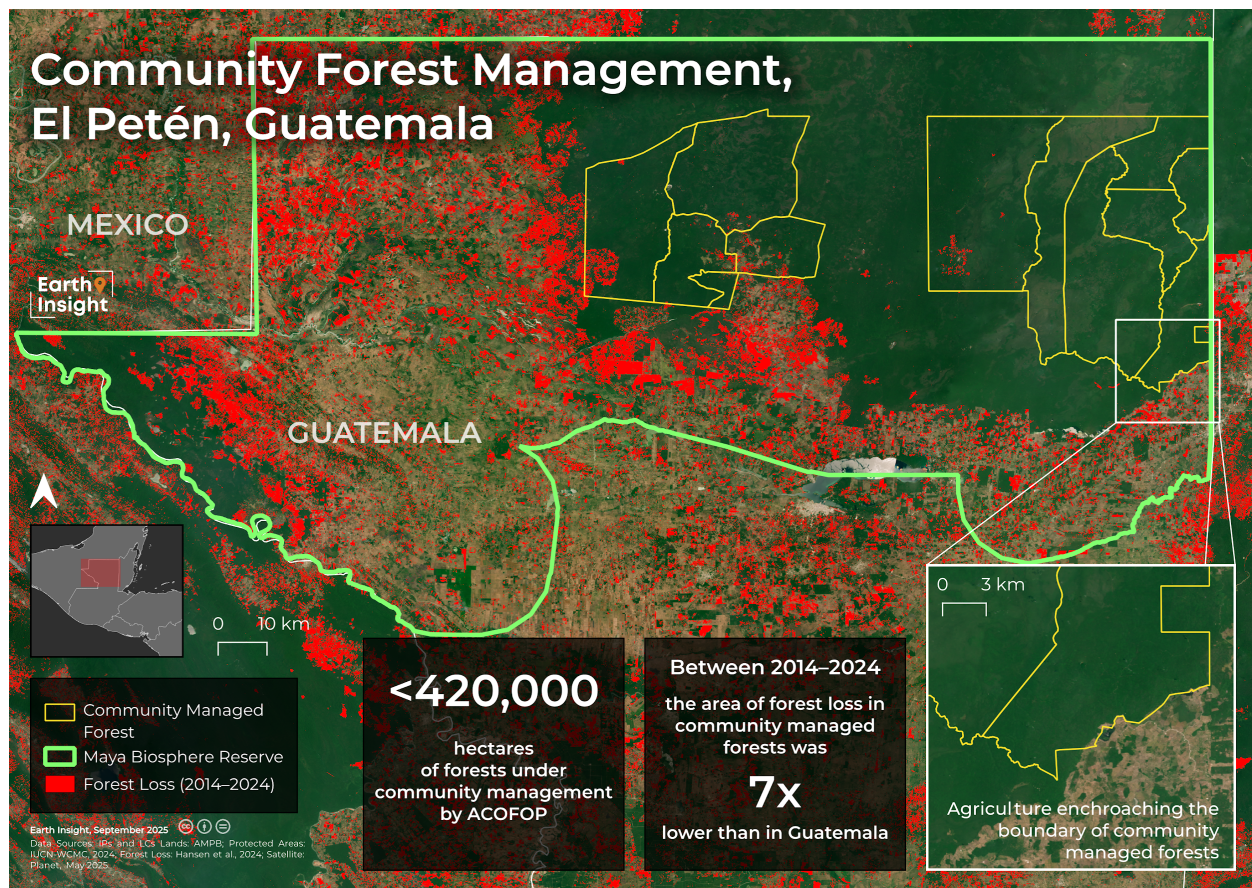
**Mesoamerica:** 18.7 million hectares of IPs and LCs lands overlap with mining concessions.

[These pressures are linked to violence](#), with at least 1,692 environmental defenders killed or disappeared within the 24 countries represented by the [Global Alliance of Territorial Communities \(GATC\)](#) between 2012 and 2024 ([Earth Insight, GATC, 2025](#)).



*IPs and LCs lands extend over 250 Mha of the Amazon region, complementing traditional protected area conservation. However, over 31 Mha of oil and gas blocks, 9.8 Mha of mining concessions, and 2.4 Mha of logging concessions overlap with these territories, undermining the stewardship these communities provide, threatening forest integrity and forest-based livelihoods. **Regional maps for Congo, Indonesia, and Mesoamerica available [here](#).***

At the same time, Indigenous Peoples' and local communities' leadership provides proven solutions: In Peru, Indigenous Peoples in Isolation and Initial Contact (PIACI) reserves (which extend over which extend over 7.7 Mha of intact intact forests) have deforestation rates 16x lower than the national average; Guatemala's community forest concessions maintain deforestation rates under 1.5%; Indigenous Territorial Entities in Colombia maintain over 99% forest integrity; communities in Indonesia are advancing land recovery; and legal progress includes measures such as the Congo Basin Pygmy Law. Across contexts, Indigenous and community stewardship consistently outperforms other land management models in maintaining forest integrity and reducing deforestation ([Earth Insight and GATC, 2025](#)).



*Community-managed forests in the Maya Biosphere reserve in Guatemala maintained deforestation below 1.5% since 2014, 7 times lower than the national deforestation rate. Sustainable forest management is central to the forest-based economies and livelihoods in these communities.*

Securing land tenure for IPs and LCs, beginning with the allocation of undesigned public land to Indigenous Territories, and establishing new Protected Areas ahead of 2030 represent a critical opportunities to expand area-based conservation measures and control deforestation at scale, particularly in regions such as the Amazon, where this could extend to at least 50 million hectares ([SPA, 2025](#)). Strengthening territorial governance at the local level enables Indigenous Peoples to exercise their role as environmental authorities, grounded in their traditional knowledge systems and long-standing relationships between communities, their territories, and the natural systems that sustain their livelihoods. [The Intergovernmental Land Tenure Commitments](#) further reinforce the central role of securing Indigenous Peoples' and local communities' land and forest rights as a foundational governance strategy for forest conservation, while mobilizing political commitment and financial support to advance tenure recognition at scale.

Effective territorial management by IPs and LCs is based on governance mechanisms and self-defined instruments such as territorial councils, assemblies, traditional authorities, and life plans (PGTAs in Brazil), which reflect deep knowledge of ecosystems, seasonal cycles, and

biocultural relationships ([SPA, 2025](#)). These systems support biodiversity protection, forest health, and ecological connectivity, while strengthening leadership and the capacity to engage with external actors ([SPA, 2025](#)).

Evidence demonstrates the effectiveness of these governance systems. [Indigenous Territories maintain 93% structural and functional connectivity across more than 182 million hectares \(ANA and RAISG, 2025\)](#) at a Panamazonian level, underscoring their central role in sustaining high-integrity ecosystems. The recognition of Indigenous knowledge systems and governance practices as effective strategies for biodiversity protection provides a strong foundation for territorial stewardship, contributing directly to the maintenance of forest cover and the reduction of deforestation.

Strengthening IPs and LCs governance systems also enables countries to advance rights-based approaches under both UNFCCC and CBD frameworks. In particular, the recognition of Indigenous knowledge as a legitimate basis for decision-making, reflected in developments such as the establishment of the CBD Subsidiary Body on Article 8(j) at COP16, creates opportunities to bridge climate and biodiversity agendas while advancing Indigenous self-determination and participation in governance processes.

A systemic and connectivity-based approach to conservation further reinforces the importance of territorial governance. By understanding forests as interconnected ecological and cultural systems, rather than isolated land units, this approach emphasizes the need to maintain structural and functional connectivity as the basis for ecological integrity. IPs and LCs governance systems are uniquely positioned to operationalize this approach, as they are inherently place-based and aligned with the biophysical thresholds of each territory.

Within this governance framework, Fossil Free Zones (FFZs), or “*zonas de vida*,” can be understood as a territorial governance instrument. When implemented in alignment with Indigenous and community land rights and autonomous structures, these approaches provide a legal and spatial mechanism to prevent industrial expansion in high-integrity ecosystems while reinforcing existing stewardship systems. Rather than being solely a regulatory tool, FFZs or *zonas de vida* operationalize governance by embedding ecological limits and biocultural values into territorial decision-making. They also mobilize IPs and LCs knowledge systems and monitoring capacities as effective infrastructure for forest protection.

Finally, accelerating progress requires strengthening learning and exchange across IPs and LCs governance models. Facilitating cross-regional knowledge sharing and the replication of effective territorial governance practices can support the scaling of solutions, strengthen institutional capacity, and promote context-specific pathways to halting deforestation.

Indigenous Peoples and local communities continue to articulate the critical role they play in forest conservation and outline the support they need from the international system. In the [Brazzaville Declaration of the Global Alliance of Territorial Communities](#), IPs and LCs from the world’s four major forest basins affirm that securing land rights, protecting territories, respecting Free, Prior and Informed Consent (FPIC), and recognizing traditional knowledge systems are

not only matters of justice, but essential conditions for addressing climate change, biodiversity loss, and sustainable development. The Declaration further calls for direct access to climate and biodiversity finance and for the protection of environmental defenders, underscoring that effective forest conservation depends on strengthening territorial governance, ensuring safety, and enabling Indigenous and community leadership at scale. In order for IPs and LCs to continue to steward intact forests in ways that mitigate deforestation, the international community must support them with resources and policy-levers that enable them to do this critical conservation work.

## 2. Place-based restrictions on industrial expansion are feasible and effective

Building on the central role of governance, place-based approaches provide a complementary pathway to operationalize forest protection on the ground by preventing industrial expansion in ecologically and culturally critical areas. This includes establishing no-go zones and extractive-free approaches in high-integrity forests, particularly where ecosystems are approaching tipping points.

In this context, approaches such as “*zonas de vida*” (life zones), and related place-based frameworks, [including Fossil Free Zones](#), provide a concrete and scalable pathway. These approaches move beyond a sector-specific focus and instead establish place-based safeguards against multiple forms of high-impact industrial activity, including fossil fuel development, mining, industrial agriculture, logging, and infrastructure. *Zonas de vida* can be understood as territorial governance frameworks grounded in ecological limits and biocultural integrity, aimed at maintaining ecosystem functionality while safeguarding the rights, knowledge, and stewardship systems of Indigenous Peoples and local communities. In this sense, they are not only regulatory tools but also spatial expressions of long-term ecological sustainability and equity through community-based and territorial governance.

As policy tools, approaches such as FFZs also help strengthen coherence and synergies across international environmental commitments, including efforts to halt and reverse deforestation and forest degradation, achieve Target 3 of the Kunming-Montreal Global Biodiversity Framework (30×30), and protect the rights and territories of Indigenous Peoples and local communities in alignment with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the ILO 169 Convention.

Importantly, such approaches can be implemented through existing legal and institutional frameworks, including protected area systems, land-use planning instruments, and the formal recognition of IPs and LCs territories. Apart from leveraging existing legislation, it is advisable to advance the strategic alignment, coordination, and effective application of existing legal and policy frameworks, while strengthening them where needed, to prevent industrial expansion in high-integrity areas.

Extractive-free zones are also consistent with scientific and intergovernmental guidance. [International Union for Conservation of Nature Resolution 140 \(2025\)](#), “Avoiding Irreversible Ecological Damage and Tipping Points in the Congo Basin: Urgent Assessment and Protective Measures,” highlights the need to prevent ecological tipping points by maintaining forest integrity, including reference thresholds of approximately 74% intactness, and encourages consideration of geographical exclusions for extractive activities in intact and high-integrity ecosystems. Similarly, [IUCN Resolution 068 \(2025\)](#), “Emergency action to restore 80% of ecological integrity in Amazonia by 2030 preventing cascading tipping points,” underscores the importance of maintaining or restoring at least 80% ecological integrity, including through measures that limit extractive pressures in critical areas. Taken together, these resolutions provide a coherent scientific and policy foundation for place-based approaches that safeguard high-integrity ecosystems, including through spatial planning tools and measures to avoid industrial pressures in the most ecologically critical areas.

These experiences demonstrate that avoiding industrial expansion in high-integrity ecosystems is both politically and administratively feasible, particularly when grounded in ecological risk, watershed protection, and long-term economic considerations. They also highlight the growing relevance of territorially grounded, place-based approaches, such as *zonas de vida*, as practical tools to align forest conservation with broader climate, biodiversity, and rights-based objectives.

#### 4. Institutional Lever: Regional and international cooperation strengthens biome-scale protection

A critical lever for halting and reversing deforestation is strengthening regional, transboundary, and international cooperation to address forest ecosystems and biomes at their functional scales. Because major forest basins operate as interconnected systems, coordinated action across countries, supported by alignment across multilateral frameworks, is essential to ensure coherent implementation, address shared drivers, and prevent the expansion of deforestation and displacement of deforestation hotspots across borders.

Regional platforms provide key institutional entry points to operationalize such coordination. In the Amazon, the Belém Declaration, adopted at the Amazon Presidential Summit in August 2023 by all eight member countries of the Amazon Cooperation Treaty Organization (ACTO), establishes a shared regional vision grounded in cooperation and integrated governance to safeguard ecological and sociocultural connectivity. This commitment reflects a growing recognition that continued fragmentation of the Amazon undermines its integrity and its capacity to regulate critical natural systems with global implications, and that measures must have a regional approach with coordinated action across borders.

Building on this, ACTO has advanced mechanisms for implementation, including the CESPIT special commission, through which countries are coordinating responses to environmental crime, deforestation, and related security challenges. The emphasis on multidimensional

connectivity, reaffirmed at the ACTO Presidential Summit in Bogotá in 2025, further strengthens the basis for regional-scale governance.

Similar levers are emerging in other forest regions. In Southeast Asia, ASEAN frameworks, such as the ASEAN Declaration on the Right to a Safe, Clean, Healthy and Sustainable Environment, support alignment of national policies and regional environmental governance. In the Congo Basin, the Central African Forest Commission (COMIFAC) plays a central role in coordinating forest policy and facilitating convergence across member states, strengthening collective responses to deforestation.

Leveraging and strengthening these regional mechanisms has the potential to enhance policy coherence, coordinated enforcement, and joint monitoring, while addressing transboundary drivers of forest loss. In this context, the UNFCCC can support the activation of these platforms as operational levers for implementation, enabling more effective, biome-scale approaches to halting and reversing deforestation.

At the international level, strengthening coherence and synergies across frameworks such as the UNFCCC and the Convention on Biological Diversity (CBD) is essential to align climate, biodiversity, and development objectives. Enhancing coordination between instruments such as Nationally Determined Contributions (NDCs), National Biodiversity Strategies and Action Plans (NBSAPs), and land-use planning frameworks can reduce fragmentation and support integrated, place-based approaches. UNFCCC and CBD frameworks can both foresee the importance of setting regional scale targets, as a stand to address the world's large tropical forest regions from an integral approach, inviting governments in each region to explicitly link measures undertaken at a national level across their NDCs and NBSAPs with those of neighbouring countries.

Greater alignment of financial flows, policy incentives, and reporting systems across these frameworks can further ensure that commitments are mutually reinforcing, enabling more effective and scalable action to halt and reverse deforestation.

## **5. Economic levers: Scaling community based sustainable models such as socio-bioeconomies to protect forest and livelihoods**

Addressing the underlying economic drivers of deforestation is equally critical to enabling long-term forest protection. This includes transition away from extractive-based and large scale land use models toward community based models such as socio-bioeconomies that sustain and improve local livelihoods while maintaining the integrity of forests and rivers under the stewardship of Indigenous Peoples and local communities.

Advancing such models requires redirecting public investment, fiscal incentives, and development finance toward diversified, locally grounded production systems. Such a shift can

enable economic transition at scale, with the potential to generate USD 8.2 billion by 2050 (SPA, 2023). Emerging markets for forest-based products illustrate this potential: the global market for açai is projected to reach nearly USD 30 billion by 2034, while the guaraná market exceeded USD 7 billion in 2023 and is expected to reach nearly USD 9 billion by 2030 ([Jarrett, 2025](#)).

Scaling these models requires strengthening interconnected production networks that link rural and urban economies, investing in decentralized infrastructure, and supporting small-scale processing and value addition within forest regions. It is also critical to avoid overreliance on a single commodity and instead promote diversified production systems, incentivizing local and regional trade, and advancing agroforestry and regenerative practices that maintain crop diversity and reduce pressure on forests.

This alternative production framework is characterized by small-scale, high-diversity, and circular systems that respect seasonality, maintain ecosystem connectivity, and support critical ecological functions such as water cycles and climate regulation. These multifunctional “pluri-economies” sustain cultural and ecological heritage, preserve genetic diversity, strengthen family and community economies, and reinforce collective decision-making processes ([SPA, 2025](#)).

Ultimately, strengthening socio-bioeconomies is closely linked to reinforcing local governance systems, as sustainable production and market access depend on the organizational capacity of communities and their ability to manage resources collectively within their territories.

## 6. Financial Lever: Direct financing to IP & LCs

A critical financial lever for halting and reversing deforestation is ensuring that climate and biodiversity finance flows directly to Indigenous Peoples and local communities, who are among the most effective stewards of forest ecosystems. Despite their proven role in maintaining forest integrity, IPs and LCs currently receive only a fraction of global climate and conservation finance, limiting their ability to sustain and scale territorial governance and conservation efforts. These groups received [a tiny share of international donor funding between 2011-2020 - — just \\$2.7 billion or \\$270 million per year on average, accounting for 1% of spending by bilateral and multilateral donors](#) on climate change.

Scaling direct, accessible, and flexible financing mechanisms, including grants, trust funds, and community-led financing structures, can significantly enhance the capacity of IPs and LCs to secure land tenure, strengthen governance systems, monitor forests and territories, and implement locally appropriate economic models. Direct finance also reduces communities’ dependence on intermediaries, which improves efficiency, equity, and accountability, while also ensuring that resources support community-defined priorities. Facilitating direct financing is therefore essential, both through guaranteeing that autonomous governments have the means

to invest in community priorities and by having all accounting guarantees required by the non-Indigenous financial system for transparency and surveillance.

Financial support to IPs and LCs should prioritize long-term, predictable funding that enables sustained territorial management, rather than short-term, project-based interventions. It should also be coupled with capacity strengthening and support for existing Indigenous and community-led governance structures so that funds can be managed directly

Aligning financial flows with rights-based approaches that are consistent with the commitments under the UNFCCC and the Convention on Biological Diversity can help close the financing gap and enable IPs and LCs to play their full role in achieving forest, climate, and biodiversity goals.

## 7. Financial and fiscal enabling conditions: Reducing structural dependence on extractive revenues and large industrial expansion

At a systemic level, fiscal and macroeconomic conditions shape national development choices and can either enable or constrain forest protection efforts. A critical enabling condition for halting and reversing deforestation is addressing the structural fiscal pressures faced by forested countries in the Global South, where rising sovereign debt and shrinking fiscal space increasingly drive dependence on extractive industries. In many cases, governments are under significant pressure from creditors to service external debt, often allocating more resources to debt repayment than to health, education, and infrastructure combined. This dynamic constrains public investment in conservation and sustainable development, while creating strong incentives to expand oil, gas, mining, and large-scale agricultural activities in forested areas.

[Emerging evidence shows a clear link between debt distress and the expansion of extractive activities across tropical forest regions.](#) (Earth Insight, 2025) Across the Amazon, Congo Basin, and Southeast Asia, high levels of public debt coincide with significant overlaps between extractive concessions and intact forests. This reflects a broader vicious cycle of debt and resource extraction, in which governments rely on short-term revenues from natural resource exploitation to meet external financial obligations, further increasing environmental degradation and long-term economic vulnerability.

Breaking this cycle requires systemic international action. This includes debt relief and restructuring to restore fiscal space, the use of grants rather than loans to support conservation and sustainable development, and reforms to global financial systems that currently reinforce external debt dependencies. Integrating climate and nature considerations into debt sustainability frameworks is also essential to ensure that countries are not incentivized to degrade critical ecosystems in pursuit of short-term fiscal stability.

These measures, combined with efforts to restrict industrial expansion in high-integrity forests and support rights-based governance, can help create the economic conditions necessary for

countries to pursue development pathways that are compatible with forest conservation, climate stability, and biodiversity protection.

## 8. Knowledge and technological levers: Integrating science, traditional knowledge, and monitoring systems

Effective implementation also depends on access to knowledge systems, data, and technologies that support informed and timely decision-making. In that sense, a critical lever to accelerate forest protection is the integration of scientific, technological, and traditional knowledge systems to inform decision-making, strengthen monitoring, and support effective territorial governance. Regional systems to monitor deforestation drivers across borders, such as [RAISG](#), [MapBiomass](#) and ACTO's Regional Observatory of the Amazon ([ORA](#)), aim to create consistency amidst differences in national legal frameworks and land-planning categories, which allows for comparative analysis with a systemic approach to biomes.

For decades, it has been widely documented that Indigenous Territories with recognized tenure have the lowest rates of deforestation, compared to areas where land rights remain insecure, leaving forests vulnerable to colonization (Carrizosa 2016). In contrast, areas recognized under land planning schemes that provide legal protection to collective lands maintain up to 98% of forest cover. The [IPBES Global Assessment on Biodiversity and Ecosystem Services \(2019\)](#) recognizes that "Indigenous Peoples traditionally own, manage, use, or occupy at least a quarter of the Earth's land" and recommends "recognizing their knowledge, innovations, practices, institutions, and values, as well as ensuring their inclusion and participation in environmental governance".

Indigenous Peoples and local communities hold deep knowledge of forests, species, and seasonal dynamics, developed through long-standing and interdependent relationships with their territories that foster intricate place-based connections that crystalize in sets of practices and tools. These knowledge systems are essential for sustainable land management, biodiversity conservation, early detection of environmental change, and surveillance over pressures and threats on the ground. The recognition and legitimacy of these knowledge systems and practices, consistent with frameworks such as CBD Article 8(j), enhances both the effectiveness and relevance of forest governance to inform wider decision making and policy frameworks.

It is clear that [the loss of traditional knowledge on biodiversity could lead to the disappearance of elements that are crucial for the survival and well-being of Indigenous Peoples and local communities, and drastically weaken the linkages between different species that ensure the vitality of key ecosystems, such as tropical forests](#). The environmental crises we face call for an intercultural, rights-based dialogue that encourages diverse systems of knowledge and thought to come together as a more effective means of finding solutions collectively. This entails recognizing Indigenous Peoples and local communities as full participants in discussion forums, as well as incorporating their governance systems, and decision-making processes and

structures (ANA 2024). At the same time, advances in science and technology, including geospatial analysis, satellite monitoring, and remote sensing, enable real-time tracking of deforestation, improved land-use planning, and more effective enforcement. These tools can enhance transparency, support evidence-based decision-making, and strengthen accountability across scales. These technologies and the information they produce, however, should not displace traditional knowledge systems.

The most effective approaches combine these knowledge systems. Integrating technological tools with community-led and Indigenous monitoring systems can improve data accuracy, strengthen early warning mechanisms, and reinforce territorial governance. Ensuring equitable access and effective transfer of these technologies, alongside investments in capacity-building and open data systems, is essential to avoid reinforcing existing inequalities. The results of intercultural models have proven to be successful in cases like the [Yanomami Alert System](#), a digital tool developed by the Socioenvironmental Institute (ISA), Hutukara Yanomami Association, and other organizations, which enables Indigenous communities to report invasions by *garimpeiros* (illegal miners) and health emergencies in real time. It functions as a mobile app, even offline, allowing users to send photos, videos, and geolocation data to help protect their territory. Since September 2023 to mid 2025, more than 200 alerts have been recorded, with approximately 67% to 70% related to invasions by illegal miners in the Yanomami Indigenous Territory.

Bridging scientific, technological, and traditional knowledge systems provides a powerful foundation for more inclusive, effective, and durable forest protection. The junction of these two knowledge frameworks serve as [practical tools to support processes of territorial conservation and defense, advocacy strategies led by Indigenous Peoples and Local Communities](#) to promote life, and the network of relationships that keep forests in balance ([SPA, 2025](#)). Bridging traditional and locally-based knowledge systems with scientific knowledge also fosters ground for a strengthened science-policy interface that can foresee the complementarity of the roles of scientists, policy-makers, and communities in order to make the decisions that protect the integrity of tropical forests and halt deforestation.

## 9. Social levers: Advancing a whole-of-society approach grounded in equity and collective stewardship

Finally, social dimensions are essential to ensure the legitimacy, equity, and long-term durability of forest conservation efforts. Therefore, it is vital to advance the adoption of a whole-of-society approach that advances equity, strengthens inclusive participation, and supports collective stewardship of forest ecosystems. This approach is consistent with the Convention on Biological Diversity, including Article 8(j) on the respect and integration of Indigenous and traditional knowledge, and Article 10(c) on the customary sustainable use of biological resources.

Effective forest protection depends on the meaningful engagement of a wide range of actors, including Indigenous Peoples and local communities, women, youth, civil society, and the

private sector. Ensuring full and effective participation, including through the implementation of Free, Prior and Informed Consent (FPIC), strengthens legitimacy, improves decision-making, and contributes to more durable outcomes.

Addressing underlying social inequalities within forest-based communities, such as insecure land tenure, limited access to resources, and lack of livelihood opportunities, is also essential to reducing the drivers of deforestation. Strengthening community institutions, supporting local leadership, and recognizing IPs and LCs as rights holders and environmental stewards are key elements of this approach.

Social levers also include promoting gender equality and youth engagement, supporting community-led monitoring and accountability mechanisms, and fostering behavioral change across both producer and consumer contexts. Increasing awareness, strengthening social norms around conservation, and enhancing transparency in supply chains across broader society can contribute to reducing pressures on forests.

Together, these elements contribute to a more equitable, inclusive, and socially grounded approach to forest conservation, reinforcing the conditions necessary for long-term success.

### **c) What country, regional or sector experiences, best practices, and lessons learned can be shared regarding forest conservation and restoration?**

Experience across tropical forest regions demonstrates that effective approaches to forest conservation and restoration combine place-based protection, rights-based governance, and evidence-based decision-making.

#### **1. Place-based restrictions on industrial expansion are feasible and effective at national scale**

Colombia provides one of the most advanced national-level examples. Its [2025 ban on fossil fuel and large-scale mining expansion across its Amazon region](#) represents a de facto application of a Fossil Free Zone (FFZ) approach to forest protection. The decision was grounded in the protection of critical ecosystem services, particularly watershed functions essential to national stability and economic activity. It was informed by research showing that developing untapped reserves beneath the Colombian Amazon would generate billions of dollars in stranded assets under all IEA climate scenarios, while contributing minimally to national energy security.

The same analysis found that extraction would threaten approximately 20% of intact forest in the Colombian Amazon and the territories of nearly 70% of Indigenous Peoples and local

communities could be threatened by fossil fuel concessions. In much of the Colombian Amazon, the cost of extraction exceeds the economic value of conservation. This research-to-policy pathway, combining stranded asset analysis, biodiversity mapping, and IP&LC rights assessment, offers a replicable model for other forested countries.

## 2. Regional coordination can scale national approaches into ecosystem-level strategies

Building on Colombia's approach, parliamentarians across the Amazon basin have introduced [legislation to extend Colombia's fossil ban across the whole region](#), coordinating with Brazil, Peru, Ecuador and Bolivia to create a basin-wide FFZ. This represents one of the most ambitious efforts to align forest conservation with supply-side governance of extractive industries at a regional scale, reflecting the need to address forest ecosystems as interconnected systems.

## 3. Multiple countries are already implementing elements of place-based protection

Beyond Colombia, a range of forested countries have adopted policies that function as FFZs or industrial restrictions in practice. Mexico has designated [approximately 100 million hectares under safeguard zones](#) limiting extractive activity in critical areas; Guatemala [has ended oil extraction in the Mayan Biosphere Reserve](#); [Laos has suspended new coal mining licenses](#); the [Philippines restricts hydrocarbon exploitation in protected areas](#); [Costa Rica has established a long-standing moratorium on hydrocarbon expansion through 2050](#); Democratic Republic of Congo has established [a moratorium on the allocation of new logging concessions in 2002](#); Brazil has established [a Soy Moratorium in the Amazon in 2006](#).

These examples demonstrate that avoiding industrial expansion in high-integrity ecosystems is both politically and administratively feasible across diverse national contexts.

## 4. Strengthening Indigenous governance systems enhances conservation outcomes

Regarding governance systems, Colombia has made substantial progress in the [formalization of Indigenous Territorial Entities](#) (ETIS in Spanish), granting Indigenous governments political and administrative functions with the full autonomy to govern their territories. This step makes the first "Indigenous municipalities" enter full operation as part of the State structure, and entails adequation of both institutional and internal mechanisms. An innovative tool has been developed by the Indigenous Territories of the North East Colombian Amazon through the development of an information system as an instrument of self-governance and the

management Indigenous territorial information called the [SIGETI](#). This enhances local capacities for the autonomous management of their information, their territories, and for engaging in technical-political dialogue with the State, thereby strengthening their capacities for self-governance and territorial management. When Indigenous governments generate and manage high-quality information, this builds the capacity of local populations to manage this data, make informed decisions regarding the management of their territories, the health of ecosystems as sources of livelihoods, the use of resources for their sustenance, and the monitoring of sustainable and regenerative cultural practices.

Beyond Colombia, there is substantial evidence of [successful community monitoring and surveillance for territorial protection exercises across the Amazon](#) (see here 9 examples across Peru, Ecuador, Colombia, Venezuela and Brazil) with a clear vision of what [protecting territories through intercultural methodologies](#) entails. Mapping sacred sites, carrying out surveillance expeditions, having early-warning systems in place, monitoring Indigenous food systems are practices implemented across forest regions. For this reason, [it is essential to be familiar with, respect, and use the monitoring and control mechanisms that they have developed over decades as strategies for territorial protection](#) (North Amazon Alliance, 2024).

**d) How can forest conservation, sustainable management, and restoration best reflect the diverse realities of countries at different stages of development, the rights and knowledge of Indigenous peoples and local communities, and different degrees of forest cover?**

Forest conservation, management, and restoration must be differentiated, flexible, and grounded in national and territorial realities, reflecting countries' varying levels of development, forest cover, institutional and technical capacity, and fiscal space. This approach should be guided by the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC). High-income, historically high-emitting countries should take the lead by reducing demand for commodities linked to deforestation and by providing sustained financial, technical, and institutional support to forested developing countries.

For many forested countries in the Global South, halting deforestation is inseparable from broader development challenges, including sovereign debt, shrinking fiscal space, dependence on extractive revenues and land use expansion, as well as need for economic diversification. Addressing these challenges requires tailored support, including concessional finance, debt relief and restructuring, grants rather than loans, investments in sustainable pathways, technology transfer and capacity building, so that countries can pursue forest protection without deepening poverty, social inequality and dependence on industrial expansion. International

cooperation should enable countries to pursue their own pathways, rather than imposing uniform models.

At the same time, differentiation should not reduce ambition in critical ecosystems. In high-integrity forests approaching ecological thresholds, immediate protection of remaining intact areas is essential. Countries can prioritize these areas, such as primary forests, Indigenous territories, and Key Biodiversity Areas, while scaling up efforts over time in line with national capacities.

A rights-based approach must underpin all efforts. Indigenous Peoples and local communities should be recognized as rights-holders and governing authorities, with their territorial rights, governance systems, and knowledge fully integrated into policy and implementation. Free, Prior and Informed Consent (FPIC) must be respected, and long-term support provided for community-led stewardship and monitoring.

Flexibility in implementation pathways is also important. Countries may rely on different combinations of policy instruments, including protected areas, Indigenous territorial governance, community forestry, restoration initiatives, and restrictions on industrial expansion in critical zones. What is essential is that these approaches contribute to maintaining forest integrity, ecological connectivity, long-term resilience while respecting the livelihoods of forest-based communities.

Ultimately, halting and reversing deforestation and forest degradation by 2030 requires a systemic transformation that addresses underlying economic, governance, social and ecological drivers. It requires protecting high-integrity forests before tipping points are reached, recognizing and supporting the leadership of Indigenous Peoples and local communities, and aligning financial and policy frameworks with long-term ecological stability. A roadmap grounded in equity, rights and differentiated responsibilities, and international solidarity can move beyond incremental progress and support a coherent and effective pathway toward sustaining the world's forests, stabilizing the climate, and strengthening resilience for the communities who depend on them.

#### **Further engagement and point of contact**

At [Earth Insight](#), we remain available to support the COP Presidency with further detail, clarification, and technical input on the data, spatial analysis, and mapping underpinning this Roadmap. This includes insights on overlaps between industrial concessions and priority conservation areas, pantropical trends, and high-risk and high-opportunity geographies. We would welcome follow-up discussions or briefings to help inform ongoing deliberations and decision-making.

For further engagement with Earth Insight, please reach out to Florencia Librizzi, Deputy Director, at [florencia@earth-insight.org](mailto:florencia@earth-insight.org) or +1 571 319 6365.

