



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

This submission is made by a network of academics at Australian Universities and is grounded in scientific principles and ecological data.

While deforestation and degradation are recognized as problems for tropical forests in economically developing countries, they are also of concern in temperate and boreal forests which fall largely within the jurisdictions of Russia, Canada, USA and Australia; who are collectively responsible for around 40% of the world's total forest cover<sup>1</sup>.

An international forest and climate roadmap should therefore include:

- Harmonised reporting requirements and definitions across countries
- Monitoring for ecosystem integrity in all forested countries
- Forest funding based on a contribution approach rather than compensation
- Alignment with other relevant international agendas, treaties and institutions

### **Part I – Why Halting and Reversing Deforestation and Forest Degradation Is Central to the Paris Agreement**

Protecting and restoring forests is essential to limiting warming close to 1.5°C. This goal requires halting emissions from both fossil fuels and forest loss, while safeguarding carbon in standing forests<sup>2</sup>. The carbon stock in the world's forests in 2020 was estimated at 870 ± 61 Pg C which is about 45% of that stored in all terrestrial ecosystems<sup>2</sup>. Annual gross forest loss & degradation emissions due to human activities are around 8.1 Gt C and annual net forest removals due to both forest management activities by humans and the effects of global change on growth are 7.6 Gt C<sup>3</sup>. Ending deforestation and degradation delivers immediate emissions reductions and allows ongoing removals from forest growth that would have been foregone by logging. Restoring degraded forests provides sustained carbon gains over time.

Land and forests are central to the objectives of all three Rio Conventions: supporting climate stability, biodiversity, and livelihoods. Forests store vast carbon stocks, regulate climate and water systems, provide habitat for species and diverse ecosystem services. Forests support 200 million Indigenous Peoples and 1.7 billion people who depend on forest resources. Protecting and restoring the integrity of forest ecosystems and the biodiversity that underpins their integrity is essential for reducing the risk of losing carbon stocks that are irrecoverable in time frames relevant to addressing climate change, particularly in carbon dense ecosystems such as peatlands, mangroves and old-growth forests<sup>4</sup>.

Following the 2023 Global Stocktake, countries agreed to halt and reverse deforestation and forest degradation by 2030. Yet 2025 NDCs lack concrete plans, leaving a “forest gap” of around 20 million hectares per year of continued forest loss, meanwhile over 50% of restoration pledges focus on monocultures rather than functional forest systems<sup>5</sup>.

In this context, the COP30 Presidency's Roadmap on Halting and Reversing Deforestation and Forest Degradation by 2030 is a critical opportunity to close this gap and safeguard climate and ecosystem stability.

### **Part II – What Countries Can and Should Do**

#### **4. Deforestation: Drivers and Solutions**

Deforestation remains a persistent problem, with 7.8 million hectares per year permanently converted to other land uses between 2015 and 2024<sup>6</sup>. Large-scale agriculture is the main driver, particularly the production of commodities such as beef and soy. Market-access risks are increasing for commodities linked to forest loss, including under the EU Deforestation Regulation and emerging similar policies. However, problems with definitions and carbon accounting rules mean that some types and areas of

deforestation are not being reported. A deforestation definition fit for assessing human impacts on ecosystems and climate should incorporate change in vegetation structure and ecological integrity over appropriate time periods, rather than relying solely on land use change.

Many countries have pledged to reduce deforestation in their NDCs, but most commitments come from tropical and subtropical regions. Only three countries in temperate biomes—and none with boreal forests—have made such pledges<sup>7</sup>. This is despite five of the top ten deforesting countries holding most of the world's temperate and boreal forests (Australia, Russia, Canada, China, USA)<sup>1,6</sup>, underscoring the need for action in these countries.

Ending deforestation must become a whole-of-government priority. Current finance and reporting focus on tropical forests, leaving temperate and boreal regions under-represented. Incentives should target measurable biodiversity, resilience, and carbon storage outcomes, with transparent monitoring of gross anthropogenic changes in forest area, condition, and carbon stocks. Monitoring net forest cover is insufficient, as it masks changes in ecosystem type and condition.

The definition of deforestation must also be extended beyond the current land use definition. Deforestation according to the FAO is the permanent conversion of forests to other land uses, meaning temporary tree cover loss from logging can still be classified as forest despite major carbon and biodiversity impacts. Forest degradation—long-term declines in ecosystem integrity from management, disturbances, and climate extremes—is harder to define and monitor, and with no consistent standards, many forms go undetected and unreported in decision-making.

## **5. Forest Degradation: Drivers and Solutions**

Forest degradation is widespread globally, occurring at roughly twice the rate of deforestation<sup>6</sup>. Yet it remains less visible due to inconsistent definitions and reporting, meaning losses of ecosystem integrity—and associated emissions and forgone carbon sequestration—often go unreported.

Industrial activity is the primary driver of degradation in temperate and boreal forests, especially commercial logging<sup>8</sup>. Logging in northern hemisphere forests is a major source of global tree cover loss<sup>9,10</sup>, has halved carbon stocks in temperate forests in Australia and Europe<sup>11,12</sup>, and resulted in increased fragmentation, reduction in old growth, and loss of biodiversity values in Canada<sup>13</sup>. Mechanical thinning is another form of forest degradation and can lead to significant GHG emissions, loss of habitat suitability of some species, widespread soil compaction, and potential erosion of forest resilience<sup>14</sup>. Climate change is also increasing the severity and frequency of fires and droughts, making extreme events an expanding indirect driver of degradation<sup>15</sup>.

Forest degradation must be elevated in policy and monitoring, particularly in temperate and boreal forests. Countries with high levels of forest degradation—such as Canada, Australia, and the US—do not report it or the associated emissions. More stringent monitoring for tropical forest finance holds tropical countries to higher standards and allows Global North countries to underreport degradation. Monitoring should capture multiple drivers and impacts, linking degradation to changes in ecosystem condition, carbon stocks, and resilience, which can be achieved by comprehensive monitoring of ecosystem accounts. Identification and monitoring of degradation need to apply comparisons against the reference level of the primary forest state<sup>12</sup>.

All forested countries should address deforestation and degradation explicitly in their NDCs, including halting loss, reducing degradation, and expanding restoration, supported by transparent reporting under the Enhanced Transparency Framework.

## **6. Forest Restoration, Reforestation and Afforestation**

To maximise climate benefits, restoration must support improving ecosystem integrity, yet the term is often mis-used to describe large-scale tree planting and forest expansion<sup>16,17,18</sup>. This has led to trees in landscapes that naturally do not support forests, resulting in high tree mortality rates, biodiversity loss from afforestation of non-forest ecosystems including grasslands, increased risk of invasive species, and displacement of agriculture that can drive deforestation elsewhere<sup>19</sup>.

Restoration of degraded forests should therefore be distinguished from afforestation and reforestation. Broad forest definitions—such as land with more than 10% tree cover—blur boundaries between forests, other wooded lands and grassy biomes, encouraging inappropriate forest expansion in savannas and woodlands<sup>20</sup>. Priority should be given to protecting and restoring existing forests, while forest expansion should consider land use, natural regeneration potential, biodiversity, and livelihood values.

Effective forest protection and ecological restoration also require sustained human and financial resources to remove pressures on forests and support recovery, including natural regeneration and, where appropriate, targeted replanting and management.

### **7. Sustainable Forest Management (SFM), Bioeconomy, Agroforestry**

SFM remains poorly defined and inconsistently applied. It is not aligned with halting deforestation and forest degradation, due to its greater emphasis on economic, not ecological, sustainability. In practice, SFM is usually interpreted to mean forest management for productivity of wood resources. In the absence of agreed definitions and standards, the use of the term SFM, which continues to appear in UNFCCC dialogues and decisions, hinders transparency and adherence to the 2030 forest targets. A key issue is that sustainable forest management is not the same as ecologically sustainable forest management, with the latter concerned with maintaining forest integrity, conserving key ecological processes, and enhancing forest biodiversity conservation<sup>21</sup>.

Bioenergy remains a source of net emissions: The scientific evidence shows that while the emissions from burning forest biomass for energy are instantaneous it takes decades to centuries for the trees to regrow. Burning forest biomass is therefore more emissive per unit energy produced than burning coal. The carbon emissions from forest biomass combustion are substantial and remain in the atmosphere contributing to global warming for the decades to centuries that are required for removals by forest regrowth. Regrowth as a source of biomass has a lower carbon stock than the primary forests. So long as harvesting continues, carbon will accumulate in the atmosphere<sup>22,23</sup>.

### **8. Forest Conservation**

Protecting the world's remaining primary forests across all biomes is critical: though under one-third of global forest area, they store ~40% of the carbon stock and hold most terrestrial biodiversity, yet over one million hectares are lost annually<sup>24,25,2</sup>.

Primary forests are also being degraded by industrial disturbance, but only about half are currently monitored, meaning this widespread form of degradation is not tracked. The absence of a standard definition and metrics for monitoring and comprehensive, standardized spatial data across boreal, temperate, and tropical biomes makes losses of primary forest difficult to track.

Recognizing Indigenous Peoples' and local communities' land rights is among the most effective forest protection strategies. IPs and LCs are often at the front-line of large-scale forest conservation efforts<sup>26</sup>, yet only about 17% of global land is formally recognized as owned or managed by these groups<sup>27</sup>. While the 2023 Global Stocktake highlighted the recognition of the importance of human rights obligations and the rights of IPs when considering climate action, few NDCs include clear commitments or measurable targets. Countries should strengthen tenure, report progress, and scale initiatives supporting Indigenous and community land rights.

Promising efforts such as the Path to Scale Initiative, and the Forest and Land Tenure Pledge must be supported and scaled up to expand the recognition and secure tenure management of Indigenous Peoples', local communities', and Afro-descendant communities' lands.

## **Part III – Fostering International Cooperation and Addressing Regulatory Bottlenecks**

### **9. Technical Cooperation, Capacity Building, Institutional Strengthening**

Improved accounting to track different states of ecosystem condition and monitor a range of forest degradation characteristics is critical to guide fair and effective action. A global forest accountability framework would ensure transparent, consistent and equitable standards for defining, monitoring and

reporting forest protection. Comparable monitoring and reporting standards should be developed across the Rio Conventions to ensure equitable and transparent forest protection, recognising differing national and ecological contexts. The UN System of Environmental-Economic Accounting—Ecosystem Accounts should be utilized to provide consistent frameworks, definitions, classifications, indicators, and capacity-building to produce standardized forest reporting for the Global Stocktake and national GHG inventories. These accounts should capture gross forest area change linked to ecosystem type and condition; carbon stock losses from deforestation and degradation; and gains from restoration; and link the quantity of carbon stocks to their quality in terms of ecosystem condition<sup>28</sup>.

The scientific foundation of the climate-biodiversity synergies agenda is the role played by biodiversity at all levels (genetic, species, community assemblages, food webs etc.) in the stability, resilience and adaptive capacity of forest ecosystems. The reason why natural forests with high ecological integrity have larger and more stable carbon stocks than logged, otherwise degraded forests and plantations, is because of their biodiversity. Climate policy that is “biodiversity blind” treats “all forests as equal” and therefore will fail to direct funding to where mitigation outcomes are maximised.

## **10. Finance, Markets, Partnerships**

While restoring forest ecosystems to promote sequestration and protecting ecosystems to avoid emissions are critical climate actions, they cannot substitute for preventing fossil fuel emissions. Rather, they are necessary complementary mitigation actions alongside the deep, rapid and sustained cuts needed in fossil fuel emissions<sup>29</sup>. Ongoing emissions cause extra warming compared with a world in which those emissions never occurred—warming that cannot be compensated by tree planting or forest protection<sup>30</sup>. As a result, carbon market finance based on forest carbon credits is not effective for achieving the 2030 forest goals, as it can increase warming by enabling continued fossil fuel emissions and undermining the longevity of forest ecosystems and their carbon stocks. Moreover, for land-based carbon dioxide removal, CO<sub>2</sub> storage periods of less than 1,000 years are insufficient to neutralize residual fossil CO<sub>2</sub> emissions under net zero scenarios<sup>31</sup>.

A ‘contribution approach’ offers an alternative funding mechanism for forest protection and restoration that avoids compensation or offsetting claims<sup>32</sup>. By supporting forests without carbon offsets, it prevents false neutrality claims, does not substitute for emissions reductions, and enables rigorous, science-based finance for protection and restoration<sup>33</sup>.

While the TFFF’s focus on forest area payments is welcome, a 20–30% cover threshold is not a credible indicator of forest degradation in moist tropical forests. Primary moist tropical forests typically have 80–100% canopy cover, and 20–50% indicates heavily degraded forests with reduced carbon stored at higher risk of loss, significant biodiversity loss, and reduced resilience, labelling 30–70% as “healthy” risks incentivising further degradation. Payments should reward higher canopy cover and ecosystem integrity. As designed, the TFFF lacks incentives to protect high-integrity forests: funding rises with overall forest cover but offers no premium for maintaining primary forests and intact forest landscapes—repeating REDD+ shortcomings and undervaluing Indigenous stewardship and the benefits of intact ecosystems—making stronger incentives essential now.

The Land Gap report shows that most pledges to reduce deforestation and forest degradation are conditional on forest finance, reflecting that many commitments come from tropical Global South countries. Quantified conditional pledges indicate that at least 23 million ha of forest could be protected with adequate support<sup>7</sup>.

## **11. International Regulatory and Institutional Adjustments and Improvements**

In tropical forested countries, failures to halt deforestation are often attributed to weak governance or finance, but global economic rules also constrain countries’ policy space. Debt burdens, investment pressures, and international financial conditions push governments—especially in the Global South—toward extractive industries such as mining, logging, fossil fuels, and industrial agriculture, which drive emissions and forest loss. Land remains under threat from continued extractivism, a form of economic activity and organization based on unsustainable natural resource exploitation often for export, with benefits largely accumulating far from the sites of extraction.

Achieving climate and biodiversity goals requires structural reforms to debt, tax, trade, capital flows, and credit rating systems. Forest policy must move beyond voluntary and market-based approaches to address drivers of extractive growth and support a rights-based, restorative global economy.

In Global North economies with extensive temperate and boreal forests, reforms should prioritise transparency and harmonised definitions and monitoring. Inconsistent reporting and vague terms like “sustainable forest management” obscure impacts from commercial logging. A global accountability framework could hold these countries accountable for carbon and biodiversity losses.

### Conclusions and Recommendations

Brazil’s Roadmap process offers the possibility to establish a new track of multilateralism focused on implementation. This should build on and strengthen the Paris Agreement, meaning that global actions to halt deforestation and biodiversity loss must address equity at their core, and pursue efforts in the context of sustainable development and efforts to eradicate poverty.

To achieve this, an international Forest Roadmap should:

- **Establish a Forest Accountability Framework** to harmonise global forest definitions and monitoring. In coordination with the FAO and CBD, this should support UNFCCC adoption of clear definitions and indicators for deforestation and forest degradation, guidelines for NDCs, and for monitoring forest loss—including primary forests—across all biomes. Definitions should be ecological (not based on land-use), define degradation relative to the ecological integrity of primary forests, and discontinue use of “sustainable forest management”.
- **Align forest goals with biodiversity targets:** Ensure forest protection and restoration are consistent with the KM-GBF targets, including retaining areas of high ecological integrity and restoring the integrity and connectivity of forest ecosystems.
- **Prioritise ecosystem integrity in forest management:** Recognising biodiversity as essential for long-term carbon storage and climate resilience—while avoiding large-scale biomass harvesting (including thinnings and residues) for bioenergy. All forest countries, including developed countries, should strengthen policies to protect and restore forest ecosystem integrity.
- **Strengthen independent monitoring:** Integrate data from the Forest Declaration Assessment process into an appropriate multi-lateral forum to provide consistency and transparency in tracking progress towards halting and reversing deforestation and forest degradation by 2030.
- **Respect rights:** Strengthen Paris Agreement and KM-GBF commitments by recognising IP and LC rights and leadership; ensuring full and effective participation in decision-making; and free, prior and informed consent, and embedding rights-based approaches in forest protection and restoration is essential for equitable, durable climate mitigation and biodiversity outcomes

Signed:

Dr Kate Dooley, The University of Melbourne

Professor Alice C. Hughes, The University of Melbourne

Dr Heather Keith, Griffith University, Queensland

Distinguished Research Professor William Laurance, James Cook University

Distinguished Professor David Lindenmayer, The Australian National University

Professor Brendan Mackey, Griffith University, Queensland

Dr Rebecca Pearse, The Australian National University

Dr Rebecca Runtig, The University of Melbourne

Dr Michelle Ward, Griffith University, Queensland

Virginia Young, Griffith University, Queensland

Contacts:

Dr Kate Dooley, University of Melbourne, (email) [kate.dooley@unimelb.edu.au](mailto:kate.dooley@unimelb.edu.au)

Prof Brendan Mackey, Griffith University, (email) [b.mackey@griffith.edu.au](mailto:b.mackey@griffith.edu.au)

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