

Dear COP30 President,

hereby I submit a contribution to the Roadmap for halting and Reversing Deforestation and Forest Degradation. My contribution touches mainly on the issue of forest degradation and means to reduce it.

Please consider:

(1) That there are several independent scientific assessments showing that tropical forest degradation affects very large tracts of forest, including forests previously regarded as being pristine or untouched (e.g. doi.org/10.1126/science.abp8622).

(2) There are different types of disturbances that lead to tropical forest degradation, namely (i) fire, (ii) edge effects, (iii) selective logging, (iv) severe droughts. Notice that some of these disturbances (or types of degradation if you prefer) are completely independent from deforestation dynamics, like types (iii) and (iv).

(3) That the resulting carbon emissions from such tropical forest degradation are at least equivalent or even larger than the carbon emissions caused by tropical deforestation (doi.org/10.1126/sciadv.aax2546).

(4) While the dynamics, drivers and consequences of tropical deforestation have been well-studied since the early 1980s, much less is known about tropical forest degradation. For example, we do not know who are the human agents funding and executing forest degradation, if they are the same as for deforestation or not.

I suggest:

(5) **Command and control on forest degradation:** a concerted effort should be made gathering climate scientists and policy makers to leapfrog observation systems that can detect and monitor tropical forest degradation on a frequent basis, just like long done for deforestation in the Amazon. One example comes from LiDAR (Light Detection and Ranging) remote sensing, now at the edge of allowing us to observe subtle changes in forest structure and biomass, which is key for detecting different forms of degradation. But as of today LiDAR sensors are not as frequent as it would be necessary for monitoring degradation. Should we have it on a more frequent basis, one could supply legal agencies to act and curb degradation. Funding is surely required for that. But a well-established monitoring system of tropical forest degradation could be valuable also to effectively increase liability for an increased presence of degradation-related projects in the REDD+ framework, which today focuses mostly on deforestation.

(6) Identifying and dismantling the operational chains of forest degradation:

Knowing the supply chains of capital to deforestation actors has proven vital to cut credit and reduce that illegal activity in deforestation hotspots of the Brazilian Amazon in the past. It is reasonable to imagine the same logic also applies to forest degradation. But first we have to assure who are the financial and intermediary institutions giving support to degradation activities, especially for those types of degradation not directly related to deforestation. So I suggest a concerted effort should be put to study and identify such supply chains and apply the same sort of sanctions that were applied to deforesters in the Brazilian Amazon in the past.

(7) Recognize that little can be done to avert degradation caused solely by extreme droughts, which charges a small price in terms of carbon emissions per unit of area, but since it hits enormous extensions of land, in the end it results in very considerable total emissions. Nevertheless it serves as a strong argument that ALL countries need to reduce their GHG emissions to prevent such effects in tropical forests. And, importantly, it raises an issue of liability for such deleterious effects of climate change in tropical forests. I suggest this should make a case for loss and damage discussions, with developed countries compensating tropical forest countries for such undesirable effects in tropical forests.

As two final pieces of suggestion:

(8) Let us please take care with the implementation of afforestation actions. There are serious ecological and biodiversity considerations to be taken when creating forests in areas where the potential vegetation/biome is not forest (e.g. in the Cerrado). Some level of coordination with the UN Convention on Biological Diversity would be highly desirable.

(9) The carbon sink of untouched tropical forests (i.e. forests not subject to deforestation or degradation), especially in the Amazon, is reducing sensibly due to increase in temperature. The removal of carbon from the atmosphere by untouched Amazon forests has reduced 30% since the 1990s (doi.org/10.1038/s41586-020-2035-0). Tropical countries that are part of UNFCCC that depend on such "passive" carbon removals by untouched forest (inside protected areas in the case of Brazil) should start thinking how to proceed in case such a C sink indeed comes to an end, both from the perspective of their National Greenhouse Gas Inventories and well as their NDCs, both of which consider such removals to calculate net emissions.

Happy to contribute and at your disposal for further clarifications.

With best wishes,

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