To: European Commission President Ursula von der Leyen, Executive Vice-President Frans Timmermans and Commissioners Kadri Simson, Virginijus Sinkevičius, Jutta Urpilainen, Thiery Breton and Janusz Wojciechowski
From: Global Scientists (listed at end)
Re: Assessment of Forest Industry Response to EU Forest Strategy post-2020
Date: 4 July 2021

We are independent scientists who conduct research on climate and the carbon cycle, ecology and biodiversity of forests and related natural systems.

The Swedish Forestry Industry has made the following points on the draft revised EU Forest Strategy:

1. **The Commission makes unacceptable claims to decide over core forest policy issues**
2. **Forest management and planning should not be defined at the EU level, neither should the extent of the forest industry production.**
3. **It must be recognized that all different wood-based products and bioenergy are essential for a successful transition to a fossil free and circular bioeconomy.**
4. **Climate benefits of wood-based products and sustainable forest management must be fully recognized and understood via a system perspective.**
5. **No carbon debt or payback time accrues from harvesting operations in Swedish forestry (Holgrem).**

We fundamentally disagree with these five points as they are inconsistent with science-based evidence and knowledge of forest ecosystems, forestry and climate change. (Note - references are hyperlinks)

Points 1 and 2 Forest management and Planning should not be defined at the EU level
The European Commission wisely links addressing biodiversity and climate change in the EU Forest Strategy post-2020. This is consistent with the recent joint report by the International Panel on Biodiversity and Ecosystem Services and the Intergovernmental Panel on Climate Change issued on June 10, 2021 (IPBES-IPCC 2021). The opening section of the joint report states: **"Climate and biodiversity are inextricably connected with each other and with human futures."** Both components must be addressed together.

A single governance regime like the EU is essential for assuring accurate forest carbon data and a uniform Monitoring Reporting and Verification (MRV) system based upon EU remote sensing and ground-based scientific capacity.

***Point 3* Wood-based products and bioenergy are essential for a a fossil free and circular bioeconomy**
Claiming that wood-based products and bioenergy are essential for a "fossil free bioeconomy" is a value assertion that is not supported by quantitative analysis. The goal is not to be fossil free or to use renewable energy per se but rather it is "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC Article 2 1992). One-third of all the extra carbon dioxide added to the atmosphere since the beginning of the industrial revolution is from deforestation, forest degradation and land use change. Forests hold just half of what they once stored and therefore have enormous carbon retention potential. When coupled with deep and rapid cuts in fossil fuels emissions, alternative forest management practices that avoid emissions from logging and enable ongoing forest growth can transfer a significant amount of atmospheric carbon to forest and soil carbon stocks in the near-term (IPBES-IPCC 2021; Erb et al. 2018).

Point 4 Climate benefits of wood-based products and sustainable forest management must be fully recognized and understood via a system perspective

Indeed, wood based products and forest management need to be understood **quantitatively** within a time dependent systems framework of full carbon accounting (Keith et al. 2021; Law et al. 2018).

In calling for more wood products it is assumed that all of them are less carbon intensive than alternatives, which is questionable in many cases (Harmon 2020). It is also often assumed that wood items are a permanent reservoir for carbon. In fact, wood is not a very durable material. Before rushing into a world of wooden buildings, it is important to understand their life-cycle. In the United States where most homes are made of wood, the average lifetime of a wooden house is 45 years and then it is torn down and relegated to a landfill where it decays and releases carbon dioxide back into the atmosphere. Houses in Japan have an even shorter existence. A U.S. study of the fate of forest carbon harvested in three west coast states from the beginning of the forestry industry in 1900 until 2015 found just 19% of the original carbon was in long-lived wood products like buildings and furniture, 16% was in landfills and 65% was in the atmosphere as carbon dioxide (Hudiburg et al, 2019). In a study of Australian forests, only 4% of the carbon found in a natural forest tree ended up in a sawn timber product which had a lifespan of greater then 30 years (Keith et al. 2015).What are the comparable values for Europe?

Point 5 No Carbon debt or payback time accrues from harvesting operations in Swedish forestry.

A recent analysis for the Swedish forestry industry (Holmgren 2021) concludes that there is no carbon debt from harvested forests because bioenergy replaces fossil fuels. Swedish forests have continued to grow while being harvested since 1980 because they are recovering from earlier 20th century losses, and annual removals from the atmosphere by growth in the total forest estate exceeds the emissions from the smaller area harvested. However, if there were less harvesting there would be two mitigation benefits: the avoided emissions from not logging the forests plus additional accumulated carbon stock from the ongoing forest growth. Holmgren's analysis actually reports less living forest biomass in the harvested scenario than in the no harvest and reduced harvest scenarios. The erasure of this carbon debt comes by claiming that fossil fuels replace the wood fuel in the no harvest scenario, and that burning wood fuel in the harvest scenarios has net zero emissions even though biomass power plants emit more CO_2 than fossil fuel plants per MWh (Booth et al. 2018). It seems highly unlikely that Sweden, where few fossil fuels are used, would substitute fossil fuels for the missing bioenergy in a no harvest scenario. By comparison, using quantitative dynamic full carbon accounting for bioenergy emissions and potential forest regrowth it is found that it takes decades to a century to erase the carbon debt from bioenergy in temperate forests (Sterman et al. 2018). Finally, in the Holmgren forest industry paper there is a qualitative claim that harvested forests accumulate more carbon in soils than do unharvested forests. This contradicts measurements that demonstrate harvesting depletes forest soil carbon rapidly because soil respiration continues to release carbon dioxide and there are fewer leaves, needles and fallen twigs and branches to be processed by bacteria and fungi into soil carbon.

Conclusion

A productive, sustainably managed forestry industry can contribute positively to the European economy when it is balanced by a proforestation management strategy based on protecting the remaining primary forests and identifying a sufficient area of secondary forests that is managed for ongoing growth to meet climate and biodiversity goals. It has been found that **globally**, "…the largest one percent of trees in mature and older forests comprised 50 percent of forest biomass worldwide." (Lutz et al. 2018). These forests will **accumulate** significantly more carbon per hectare between now and 2050 or 2100 than will planting 3 billion trees in the next few years. Deciding which forests should primarily provide biodiversity and climate services is a political decision. Determining which forests will be most effective in accumulating carbon, and increase climate resilience and biodiversity must be guided by scientific analysis for informed decisions.

Please contact us by responding to the email if you need further information.

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