



EASAC

c/o The Royal Academies for Science and the Arts of Belgium
Att. Prof. Christina Moberg
Hertogsstraat 1 Rue Ducale
B-1000 Brussels, Belgium

Vienna, July 5, 2021

Dear Prof. Moberg,

Thank you for answering to our concerns regarding public statements of EASAC on the relationship between bioenergy use and climate change mitigation.

Your letter is starting with the assertion that “science leads to the inevitable conclusion that increasing the harvest of wood from forests to replace coal in power generation leads to an initial increase in carbon dioxide emissions”.

It is precisely this type of statements we find problematic and contradicting the essence of scientific work. Scientific conclusions are not “inevitable” but related to the research question and in some cases very much influenced by the assumptions the research is based on.

This is particularly true for the concept of carbon debt which is heavily dependent on the scale of managed land you are looking at, on alternative scenarios you consider as reference case to managing and harvesting and on assumptions regarding forest management.

There is solid empirical evidence that increasing forest harvests can very well go hand in hand with increasing carbon stocks in the forest. In fact, this has been shown to be true for decades of forest management in countries such as Sweden and Austria and recent research shows it is also true for the Southeast USA. <https://www.nature.com/articles/s41598-020-75403-z>

This is the case because forest productivity has been improved by practices of sustainable forest management and by preventing the spread of pests and forest fires. To me it seems very problematic to speak about an “inevitable conclusion of science that increased harvest ...leads to an initial increase of carbon dioxide emissions” if the carbon stock in several countries mentioned is increasing year by year despite increased harvesting activities - which means that CO₂ levels in the atmosphere are not increasing but decreasing.

Another key issue are the assumptions regarding the kind of harvesting and the alternatives that are being considered. The proposition that forests are harvested for energy is deeply



misleading. Forests are never harvested for energy but for timber which is providing the main source of income for forest owners, in Austria over 80% of total income. The harvesting of timber always leads to the supply of significant amounts of wood such as branches or stems of trees that are diseased or cannot be used for timber due to other quality deficiencies. This is the source of wood that is used for supplying energy, wood that in many cases has been left to decay in the forest in the past, releasing CO₂ without supplying any useful service or used to produce newsprint discarded after a day of use.

Finally, the alternative, to which harvesting is compared to, the so-called counterfactual: suggesting to stop harvesting trees and replacing wood and wood based products by plastic, steel or concrete seems like a fairly absurd proposition in a situation where the replacement of fossil fuel based products and the establishment of a bioeconomy is a priority. However, this is precisely the reference case that establishes carbon debt as “scientific fact”.

It is no surprise, that the International Energy Agency in its most recent publication, that describes a pathway to net zero CO₂ emissions recognizes the important role of bioenergy in achieving this goal and explicitly states, that this is possible within the boundaries of sustainable use of the existing potentials. <https://www.iea.org/reports/net-zero-by-2050>.

I have asked the Academies of Sciences that are member to EASAC to initiate a scientific debate regarding the positions EASAC has published due to the impressions that in the context of bioenergy use EASAC is acting more like a campaigning organization than a reference scientific organization. Individual researchers making scientifically highly controversial statements should not have the opportunity to use the scientific prestige of the Academies of Sciences to claim “inevitable scientific conclusions” without proper scrutiny and debate if the assumptions they base their work on are relevant and meaningful.

I do hope you are willing and ready to engage in such a debate.

Best regards

A handwritten signature in black ink, appearing to read "Christian Rakos". The signature is stylized and fluid.

Christian Rakos