

## Review of Sailesh Rao's paper [\*Animal Agriculture is the Leading Cause of Climate Change\*](#).

Under the United Nation Intergovernmental Panel on Climate Change (IPCC) greenhouse accounting conventions, developed three decades ago, animal agriculture is responsible for [14.5%](#) of greenhouse emissions, or [more](#) when lifecycle analysis is used. Both these estimates are strictly correct, according to the narrow scope of these conventions. Rao's paper points out the flaws that render these conventions no longer fit for purpose, for example:

UN IPCC greenhouse gas accounting conventions no longer align with climate science on several aspects:

- IPCC accounting starts with industrialisation, not with the start of [deforestation, the greatest emission source](#).
- IPCC accounting ignores the highest impact climate activity: land use. This carbon opportunity cost has been [well studied](#) and accepted as the most effective climate solution by such as [Project Drawdown](#) and [Natural Climate Solutions](#).
- Although framed as the main cause of climate change, [fossil fuels have caused just 20% of global warming up to 2015](#) due to co-emitted cooling aerosols.
- IPCC accounting downplays the importance of vegetation, even though [most of the CO2 emitted each year is taken up by vegetation and the oceans](#). Fossil fuels are assessed using gross accounting and land use assessed with net accounting.
- ["Managed" land is treated differently to "intact" forest](#), although the CO2 drawdown process is exactly the same in both. If drawdown by all vegetation was considered, the airborne fraction would decrease from 45% to about 30%. This highlights the importance of vegetation for climate.
- The full impact of [deforestation is obscured with the IPCC use of net accounting](#), after subtracting drawdown from other vegetation on "managed" land. This under-reports deforestation emissions by 300-400%. Vegetation growth occurs despite human intervention, and would continue if deforestation ceased, a significant additional drawdown mechanism.
- Methane's climate impact is averaged over 100 years, although its atmospheric life is 10 years. This diminishes its mitigation priority, even though CO2 has caused less warming than methane, [and methane has caused half global warming to date \(just over 0.5C\)](#). Also, Steep cuts in methane emissions are the [primary means we have](#) of actually cooling the planet.

Rao adopts a systems approach to the many factors that influence climate, an approach that is entirely unconventional, but the weight of evidence Rao brings to this difficult subject leaves no unbiased reader in doubt that animal agriculture is the leading cause of climate change.

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July 2023