

THE AMAZON FIRES, AN ALARM THAT LACKS PROPORTION

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

The upsurge of global environmental anxiety over the recent spate of [forest fires in the Amazon](#), apparently marking a renewed push to deforestation, is clearly testimony to the heightened awareness of the danger to human security represented by global warming. The provocatively anti-environmental and climate denial views of Brazil's President, Jair Bolsonaro, and his colleagues, the reining in of environmental controls if not disabling them, the President's initial air of unconcern, and his absurd counter-allegations regarding the causes, have all contributed to exacerbating this anxiety. Predictably, this has drawn the ire of environmentalists, and public and government opinion globally, though the global media has been more circumspect.

Unfortunately, in this confrontation, facts and scientific evidence have become collateral damage, obscuring in the hype some of the substantive challenges to global climate action. The confrontation is also in danger of skewing the global discourse on climate policy, opening the way for unprecedented pressure from developed countries on the global South.

What has been the overall contribution of deforestation and land use change to global carbon emissions? As the Intergovernmental Panel on Climate Change (IPCC) notes in its Fifth Assessment Report (AR5), the cumulative net addition of carbon to the earth system from terrestrial ecosystems since 1750 amounts to 30 Gigatonne (Gt) with an uncertainty of plus or minus 45 Gt. In the words of the IPCC in the AR5: "The net balance of all terrestrial ecosystems, those affected by land use change and the others, is thus close to neutral since 1750."

The key word here is net. Though cumulative emissions from land-use change since 1750 amounted to almost 180 Gt, driven largely by the more than six-fold expansion of cropland, they were compensated by the 160 Gt of absorption by existing vegetation not subject to land use change. Fossil fuel use, in contrast, contributed 375 Gt since 1750, that is more than 12 times that of the net cumulative emissions from terrestrial ecosystems.

This pattern in carbon accounting also extends to annual emissions. On an average, the Global Carbon Project reports, fossil fuel emissions currently pump about 9.9 Gt of carbon annually into the atmosphere, while land-use change accounts for 1.5 Gt. But terrestrial ecosystems absorbed 3.8 Gt. Taking sources and sinks together, they are a net sink.

For tropical forests alone, following literature cited in the AR5, annual emissions (averaged over 1990 to 2007) due to deforestation and logging amounted to 2.9 Gt of carbon, while this was compensated by carbon absorption due to forest regrowth (1.64 Gt), recovering from deforestation and logging, and carbon absorption by intact forests (1.19 Gt). As a result, overall, tropical forests were marginally a source of emissions of about 0.11 Gt of carbon per year. Clearly there is no cause for complacency here, but nor is this yet an emergency.

The story with respect to the [Amazon River Basin](#) and its tropical forest cover is very similar. By one scientific estimate, the Amazon, in 1980, stored 128 Gt of carbon, with 94 Gt in vegetation and 33 Gt in the reactive component of soil carbon. Subsequent evolution of the carbon storage in the Amazon, makes for a complex story. But while preservation of the Amazon as a carbon pool is essential, such preservation clearly is not the magic bullet that would counteract the impact of fossil fuel emissions.

But the bottom line from this evidence is that fossil fuel emissions have a lasting impact of a kind that deforestation and land use change do not. The effect of the latter can be partially repaired over time, albeit slowly, as the data on tropical forests demonstrates, while untouched forests and living biomass continue to absorb carbon. Fossil fuel emissions from coal, oil, and gas cannot however be put back in to where they came from. Nor can their cumulative emissions be compensated by increased vegetation, since it will amount to increasing the cumulative absorption of terrestrial ecosystems to an improbable level. Forest ecosystems, in balance, will suffer from the overall impact of global warming, degrading their extent and quality.

Even the alarm expressed over the current forest fires in the Brazilian Amazon, lacks a sense of proportion. Data from Brazil's National Institute for Space Research shows that the number of fires this August, while large, is not exceptional. The year's tally, till August 25, was 80,626, a 78% increase year-on-year. However, in Peru it is 105% higher, and in Bolivia 107%, both part of the Amazon basin. There are forest fires elsewhere, extensive in Africa, particularly in Angola, Zambia and the Democratic Republic of the Congo (attributed to slash-and-burn agriculture), in Siberia (three million hectares) and in Canada, both attributed to unusually high summer temperatures (this July being the warmest month ever). Brazil's tally this year is nowhere yet near its highs from 2005 and 2010, when it exceeded 120,000 for the comparable period of the year.

Brazil has also put in substantial effort over the last decade to slow down deforestation, with some notable success, reducing it by 2013 to 75% of its pre-2005 annual average, success that was hailed globally. It is quite likely that Mr. Bolsonaro represents a reaction to the tough measures that accompanied this effort, not only from agribusiness in soy and beef production, as has been plausibly argued, but also a large section of small farmers who found it difficult to shift from slash-and-burn to intensified cultivation. Apart from deforestation though, Brazil is by no means a high emissions country, and a model of renewable energy use from hydro power and biofuels.

What then has driven the global outrage against Mr. Bolsonaro? On the part of global public opinion, the notion that afforestation constitutes some kind of magic bullet to fight global warming, is a popular one. The Amazon was always the poster-child of conservation and biodiversity, and halting deforestation there a global cause célèbre among environmentalists and their movements. With global warming, the difficulty in slowing down fossil fuel emissions provides added fuel to such views, even if the evidence militates against them.

However, the attitude of the governments of developed countries and many international non-governmental organisations that share these views, is clearly driven by other considerations. These nations have notably failed to deliver in reducing their fossil fuel emissions. As a 2018 report of the United Nations Framework Convention on Climate Change (UNFCCC) has noted, the developed countries (excluding the former Soviet bloc nations whose emissions plummeted along with their economies) have achieved a reduction of only 1.3% over 26 years from 1990. The only way to maintain the Paris Agreement's promise, that they brokered, of restricting global warming to well below 2° C or indeed 1.5°C is by turning the screws on mitigation in the non-industrial sectors. These sectors play a major role in the emissions of most developing countries, however low they may be in absolute terms.

Mr. Bolsonaro's revolt is particularly unwelcome in this context, even if it is inspired by the United States, and its President, Donald Trump. But while a superpower cannot be brought to heel, nor indeed can large developing nations such as China and India, Brazil is a softer target. The threat by the French President, Emmanuel Macron to block the EU-Mercosur trade deal to mark the European Union's displeasure marks a new low in the global North's pressure tactics on the South in dealing with the climate challenge. In a dangerous portent, a noted U.S. foreign

policy commentator, Stephen Walt, writing recently in *Foreign Policy* magazine, speculated on precisely such tactics. He further speculated that “major powers” could intervene even militarily to discipline nations recalcitrant in climate action. Global talk of a climate emergency that is not grounded in scientific evidence, however well-intentioned in their origins, could also unwittingly fuel thinking along these lines.

The Amazon and other terrestrial ecosystems offer much needed room to manoeuvre in dealing with global warming. But without reducing fossil fuel emissions drastically and the global North paying back its carbon debt by taking the lead, there can be little hope of meeting the climate challenge.

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