

CO₂ Emissions, Climate Change, and Human Development

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It is likely that the Intergovernmental Panel on Climate Change (IPCC) CO₂ emissions scenarios are too high. In essence they are all still based on traditional economics that does not recognize fundamental physical limits to never ending growth. It is very unlikely that the finite Earth environment can sustain U.S. levels of resource consumption by 7 billion, and more, people. As resources increasingly have to be extracted from less attractive deposits, the rise of demand will be curbed by the increasing cost of extraction. A realistic projection of future atmospheric CO₂ is lower than IPCC projections, but the very long persistence of CO₂ in the atmosphere and oceans (see figure) makes it likely that slow climate feedbacks come into play. Slow feedbacks are hard to analyze and quantify until they actually occur, but they could be large enough to still make climate change hard to cope with. Climate change is expected to become an impediment to development, but rising costs of natural resources are likely to hamper development together with climate change, or even before climate change. We do not have a choice between mitigation of climate change and development. On the contrary, the latter can only occur in an economic system that functions well with little or no extraction of non-renewable resources, including fossil fuels, which then also mitigates climate change, decreasing the probability of disruptive changes in our ability to provide food, clean water, and other necessities.

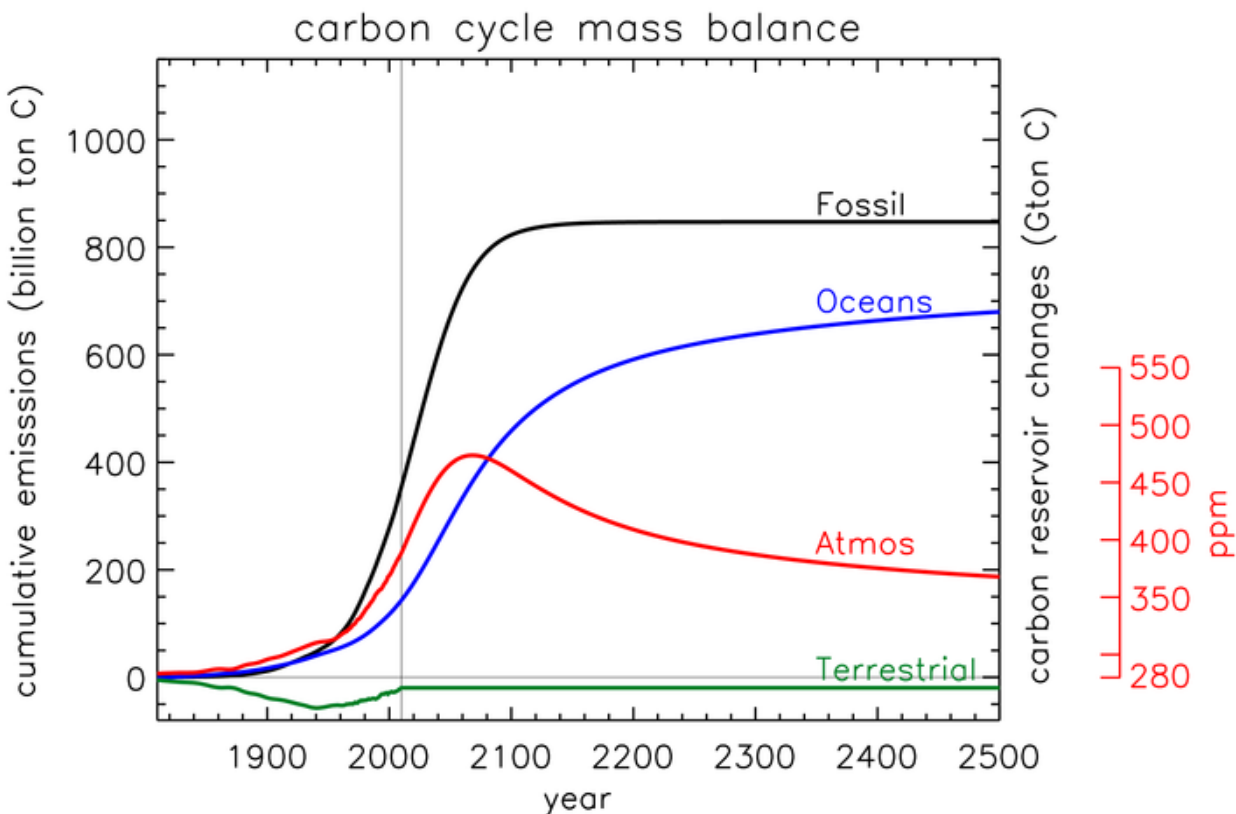


Figure 1. CO₂ in the atmosphere and oceans.