Greenhouse gas emissions from deforestation are almost directly proportional to the biomass of forest cleared. Existing estimates of emissions from Amazonian deforestation vary by more than a factor of two, largely because of widely varying degrees of completeness in the components included. Other critical portions of the calculation include the growth of secondary forests in deforested areas and the inclusion of inherited and/or committed emissions (or neither). Inclusion of all relevant factors results in estimates for emissions double those of some prominent estimates.

New data indicate that commonly used wood density estimates need to be adjusted downward by 5.3%. Adjustments to biomass and emissions are sufficiently large to be significant for the global carbon balance. For example, an estimate of net committed emissions of $249 \times 10^6$ Mg CO$_2$-equivalent C/year for Brazilian Amazonia in the 1990, of which $237 \times 10^6$ Mg CO$_2$-equivalent C/year was from net removal of biomass, results from reduction of the previous estimate by $14 \times 10^6$ Mg CO$_2$-equivalent C/year (5.7%: more than the 5.3% adjustment to gross emissions because regrowth estimates remain unchanged). Decreases of similar proportions would apply throughout the tropics. For the 1980s, adjustments to net emissions total $113 \times 10^6$ Mg C/year for CO$_2$ effects alone, or approximately $132$ Mg CO$_2$-equivalent C/year including trace gases. We emphasize that the revised density values will not reduce the discrepancies between the various published estimates for forest biomass and emissions in Amazonia and for the tropics as a whole; instead, all estimates will shift in parallel to a lower level.