

Interactive comment on “The global carbon budget 1959–2011” by C. Le Quéré et al.

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This reply and particularly the statement reading “Global CO₂ emissions from land-use change (ELUC) activities were 0.9 Pg C plus/minus 0.5 Pg C in 2011, with the decrease of 0.2 Pg C per yr from the year 2010 estimate based on satellite-detected fire activity...” raises further questions about the large uncertainties in ELUC estimates reported in this study.

First, the GFED method of van der Werf et al. (2010) found that “Carbon emissions from tropical deforestation, degradation, and peatland fires (ELUC) were on average 0.5 Pg C per yr.” This is “the total number” from GFED (as also reported by Potter et al. 2012) and implies that the bookkeeping model must estimate ELUC average fluxes at more than 0.9 Pg C per yr in order to arrive at a combined (bookkeeping plus GFED anomaly) ELUC flux of 0.9 Pg C per yr. This further implies that the bookkeeping

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ELUC flux exceeds GFED average ELUC fluxes reported by van der Werf et al. (2010) by more than two-fold, which is difficult to accept as credible.

Second, estimated ELUC fluxes of "0.9 Pg C plus/minus 0.5 Pg C, with the decrease of 0.2 Pg C per yr from the year 2010" suggests that ELUC fluxes could have totaled only 0.2 Pg C in 2010, which seems unlikely, and highlights the fact that ELUC fluxes in global carbon budget still carry enormous uncertainties.

Interactive comment on Earth Syst. Sci. Data Discuss., 5, 1107, 2012.

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