

Interactive comment on “Can we reconcile differences in estimates of carbon fluxes from land-use change and forestry for the 1990s?” by A. Ito et al.

F. Achard (Referee)

frederic.achard@jrc.it

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The paper is very interesting by showing the large range of estimates of carbon fluxes from land-use changes for the 1990s from different methods (figures 4 or 6 in particular). Reconciling estimates of carbon fluxes from different models is still a challenge.

The differences in estimates of LUC areas over 1990s (e.g. global in fig 1 or for Brazil in fig 5) are also very interesting by raising questions about consistency of these estimates and their impact on estimates of carbon fluxes.

Attached a few suggestions for improvement of the methodological description:

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In page 5 in Introduction: " We concentrate our efforts on the period since 1990 when the UNFCCC data sets began."; You may be more explicit on this point as it is / will be a crucial item for the REDD discussion (selection of a reference period). You may add that year 1990 is used as a reference year for the Kyoto protocol including the Clean Development Mechanism (See in particular Schulze et al. 2003 Science about this reference year for CDM LULUCF projects). Schulze E-D, Mollicone D, Achard F, Matteucci G, Federici S, Eva HD, Valentini R (2003) Making deforestation pay under the Kyoto protocol? Science 299:1669

The structure of section 2.2 is a bit confusing when looking at Table 2 which summarizes the different models used in the study, in particular in relation to the numbering of the approaches. E.g. it is not clear why bookkeeping approaches described in section 2.2.2 are numbered EMI1 & EMI5 when EMI4 & EMI5 would be more logical after the first set of three inventory approaches.

In section 3.3: "The global flux for EMI8 was calculated by summing the consolidated estimates from the ten regions (i.e. those described by Houghton, 2003) that are represented in all data sets." It is not clear to me why the ten regions are mentioned. Is there any part of the world missing (I do think so when looking at the 10 regions of Houghton 2003? it related to computational aspects (ie not possible to compute the full world?

When commenting on the differences in estimates of LUC areas over 1990s for Brazil in section 3.4.2, you may refer to Eva et al. for LUC6 when mentioning the GLC2000 data set (Eva H D, Belward A S, De Miranda E, Di Bella C M, Gond V, Huber O, Jones S, Sgrenzaroli M and Fritz S 2004 A land cover map of South America Global Change Biol. 10 732 45)

In 3.4.1 when comparing inverse model fluxes for Temperate North America with the bottom-up inventories examined here for the USA, a table may help here.

In 3.4.2 when comparing the available inverse model fluxes for Tropical and South

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America with our consolidated bottom-up method for the decade 1991–2000 it could be also compared to bottom-up estimates of LUCF in Amazonia or South America or (Achard et al., 2004; DeFries et al., 2002, Houghton 2003) as these estimates were used in AR4.

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