

Interactive comment on “Variability and recent trends in the African carbon balance” by P. Ciais et al.

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This is an exceptionally well written and executed modelling study of the quantities and components of the net carbon balance of Africa. The analysis establishes a first baseline budget for the continent to be further improved and tested by assimilating in situ and remote sensing datasets, and further developing the model for African conditions. I applaud the effort and I recommend publication in Biogeosciences after a number of minor revisions are incorporated in a revised manuscript.

1. Abstracts and throughout the text. Yet the period analysed is 1901-2002, there is only discussion on the last two decades. Eg, Abstract, lines 5-7, and also in results. The reader will keep asking, what happened prior to 1980?. Please include key results in text.

2. pg. 3499, lines 1-2. Provide a range of NPP for Savannas, not just one number from an unpublished source.
3. pg. 3499, lines 8-9. Articulate better the reason why is important to quantify the carbon balance of Africa. An increase population is not a good one.
4. pg. 3500, line 2. Houghton 2003 reference is missing in the Reference section. Also, please check the paper same special issue by Canadell, Raupach and Houghton (2008).
5. line 10. spell out REDD
6. pg. 3501, line 5. Webber is missing in reference section. Please check all reference in text against Reference section.
7. line 22. The description of the model includes a ...model dealing with vegetation dynamics processes. The text comes across as inconsistent with an early statement in the abstract (lines 4-5) ..but the natural vegetation dynamics were ignored. Please clarify this apparent inconsistency.
8. pg. 3504. Provide full citation for Weber, and consistent with previous citation.
9. pg. 3505 and 3506. Make consistent the reference to Fig. Use simple (Fig. X) and delete additional sentences such as (This is shown in Fig. 1).
10. pg. 3505, line 20. See edits: autotrophic respiration (RA (..) decreases more than two times the heterotrophic;
11. pg. 3507, line 2. Spell out EOF.
12. pg. 3509, lines 24-26. Inconsistent with the statement in the Introduction (pg. 3500, lines 6-9).
13. pg. 3510, line 6. policy incentive; not incentive policy.
14. pg. 3512, line 8, the continents;. Do you mean all continents or continental wide

Africa only?

15. Should the 13% (line 8) and 89% (line 13) add up to 100%?

16. Discussion on lines 18-21, see also Canadell, Raupach and Houghton (same special issue).

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