

Interactive comment on “A reconstruction of Atlantic Central African biomes and forest succession stages derived from modern pollen data and plant functional types” by J. Lebamba et al.

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I am grateful for the opportunity to review the paper entitled “A reconstruction of Atlantic Central African biomes and forest succession stages derived from modern pollen data and plant functional types”; by Judicael Lebamba et al, for the Climate of the past special issue. I think this paper is very clear, well written and concise and can be published as it is in the special issue of Climate of the Past. This study focuses on the vegetation reconstruction in Atlantic Central Africa from pollen data in terms of biome changes, and succession stages of forest regeneration. The paper of

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Lebamba et al. presents interesting new findings in terms of methodology and results: - The modern pollen dataset used in many paleoecological studies (eg Jolly et al., 1998, 1996, Peyron et al., 2006) has been updated by new modern surface samples from Cameroon and Gabon. This addition is very important to improve the reliability of the biomes and to refine climate past reconstructions in this region (for example, the applications of different transfer function could produce different results in this region (Peyron et al., 2006). -In a methodological point of view, this study proposes more detailed plant functional types (PFTs) with the addition of lianas and herbs into new PFTs. New PFT-taxa and biomes assignments of pollen taxa are also proposed. - The most interesting and new point of this study concerns an attempt to use the PFT concept to reconstruct the potential succession stages of forest regeneration. Lebamba et al showed that the mature forest is well differentiated from the secondary forest, but that inside this latter group, the young and the pioneer stages are not clearly identified. In a future work, I strongly encourage the authors to collect more samples from the secondary forest, and to test again their approach. So, I really don't have seen any critical points concerning this study. I recommend the publication with minor changes, which are listed below.

Minor points: - In the abstract, line 10/11, could you use tropical rainforest (TRFO) and tropical seasonal forest (TSFO) as it is the case in the body of the text? Could you also nuance the sentence White's map must be revised. - In the introduction, line 16, the CO2 concentration is not considered as a climatic parameter sensu stricto, please correct. May be better to use assignment instead of aggregations, line 29. - p.160, line 9 could you add references when you write that the method is now used worldwide - p160, chapter 4.1, correct Urundi to Burundi - p166, line 15 the ref Lezine et al, submitted is not in the references part.

Fig.1: the difference between TSFO and SAVA is really not clear in the maps, please use other symbols Fig; 3: this figure is not clear, samples from the different area are not easy to distinguish, could you use others symbols or colour, may be?

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