

Interactive comment on “Climate and land use change impacts on global terrestrial ecosystems, fire, and river flows in the HadGEM2-ES Earth System Model using the Representative Concentration Pathways” by R. A. Betts et al.

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Thank you for your review and comments.

Regarding the general observation that the ms is too Hadley Centre centric, on reflection we agree with this. We will rectify this in a revised manuscript.

Points (1), (2), (5), (9) and (14). Thank you for the suggestions for additional literature to discuss. We agree that a broader context should be given and will use these suggestions as a basis for this.

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Following your extended comment in point (14), we will revisit section 3.4 to ensure an appropriate level of detail.

Point (7) - yes, we did use scenarios of non-CO2 GHGs and aerosols. This will be clarified.

Point (12) - yes, CO2 fertilization plays an important role here. This will be clarified.

Point (16). We assume this refers to page 6192 not 6191. We see why this has caused confusion, as it has not been expressed very clearly - apologies. We mean that over-sensitivity of the vegetation model is unlikely to be a major contributor to the Amazon die-back simulated by the HadCM3 family - the simulation regional climate change caused similar responses in many models.

Point (17) They did indeed. Our point is the link to deforestation activity - we will investigate this for the cases you mention.

Point (20) - agreed, we will say "potential importance".

Point (21) - the reason is that maintaining full consistency by using online impacts will take away the ability to bias-correct the climate state, so the baseline will be less realistic. We will explain and discuss further in this paragraph.

Point (22) Yes. We will correct, thank you for spotting that, we should have proof-read more carefully.

The other specific corrections / clarification will be addressed - thank you for pointing them out, and please accept our apologies for this being necessary.

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