

Referee #2:

The paper by Poulter et al. presents a tool of conversion of european land cover classification to Plant Functional Types. This work is highly valuable to the validation and evaluation of dynamic vegetation models. However, I think that the manuscript could better reflect the authors' important contribution.

**We appreciate the reviewers comments and in recognizing the importance of the research.**

To me, the core of the innovation in this paper is the conversion of land cover to PFT. However, the choice of conversion thresholds (Table 2.) are barely justified and discussed. I believe a more detailed report of underlying discussions would be valuable to the scientific community. During the discussions for a consensus, which challenges were discussed?, and what were the arguments? How these choices would influence the results? Are uncertainties associated to these values and propagated? One obvious problem is that land cover information is not enough to derive PFT. Which additional information is crucial to add, and/or was efficient to discriminate between PFT?

**Based on these comments and those of Reviewer 1 we have expanded on the discussion of how the thresholds used in the conversion of land cover to PFT were made. This is a commonly accepted technique (Jung et al., 2006; Poulter et al., 2011; Quaife et al., 2008) despite the uncertainties involved. Our approach by using a consultative process with modelers and the data producers is fairly unique in helping reduce uncertainties stemming from interpretation of the PFT concept. As mentioned in the response to Reviewer 1, Phase 2 of the LC\_CCI program (2015-2017) will address the uncertainties in more detail.**

The comparison with original PFT maps is very interesting. However, are they available observations to evaluate the different classifications? What are the challenge of such evaluation?

**The comparison with the original PFT maps is challenging because the thematic legends are slightly different between each modeling team and the LC\_CCI product. Generally, the PFT maps from the modeling teams are already highly aggregated and not directly comparable. Modifying the legends to match one another and to quantify the areal extents of PFTs for a direct comparison has several sources of uncertainty. We address this in Section 3.1.**

The results highlight differences between PFT maps, but what are the advantages of your classification among others?

**The advantage of our classification system is that it is a first order approximation of PFT categories, that is, the modeler can continue to aggregate PFTs easily into more broadly defined categories per the specifications of their model. We clarify this in Section 2.6.**

In general, the structure of the manuscript could be improved to help the reader follow the rational of the approach, and the manuscript could be shortened in order to be more concise. The introduction could be more focussed on a clarified objective such as obtaining trustable PFT maps for vegetation models validation. Some parts of the manuscript are very descriptive and highly redundant with the information contained in tables or figures.

**We have modified the manuscript throughout to make sure that descriptions are concise and clear to the readers.**

Finally, it is mentioned that uncertainties are given, from different classification schemes. What are the different sources of uncertainties accounted for? And what are the ones ignored? The mapping of uncertainties is very important and this feature could be more discussed.

**The uncertainties of the cross-walking approach have been discussed in earlier comments and are being more systematically considered in Phase 2 of the LC\_CCI project. We have modified sections of the manuscript to reflect the importance of considering uncertainty for this topic.**

## References

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