

Thanks for the very nice revision! From my point of view, the authors well addressed the comments from the other two reviewers and me, and the manuscript is now in a good shape. I believe this study is very valuable to the community. Here are some of my remaining minor remarks:

L273: the “()” is redundant.

L400: please double check the usage of  $GCD < 0$  and  $GCD > 0$  in this section. For example,  $GCD < 0$  sometimes means mostly-grazed, but means mostly-cut in other cases.

L421: Hr should be Rh.

Table 1: The NBE can not be obtained from the values presented in the table. It would be helpful to give values for all the components of NBE and  $\Delta SOC$ . In addition, it is not clear what is the meaning of C flux into soil. Does it include litter and manure?

L434: It is not clear what are included in the “high inputs of C to soils”, litter + manure? Does manure from refinement included in this study? If not, it should be mentioned and discussed. Because it will cause an underestimation of C input for grassland.

L600: I would think it would be helpful to use the meaningful parameters' name (e.g., PNUE, or LCA) rather than the Code of parameters (e.g., P10, and P15) across the manuscript.