

Editor's comments:

I have read the manuscript as well as the reviewers' comments. The manuscript is well written but there are some things missing. The authors state that the change in maize grain yield is attributed to the climate change, since all agricultural practices are the same. My main concern is soil properties. Since farmers do not use any inputs, soil fertility is likely to decrease over the years, justifying the lower maize yields, along with climate change. This should be discussed extensively, since the same cultivars are used for many years, suggesting that the nutrient absorption from soil is every year the same, since the needs of a specific cultivars are the same. A soil of poor quality could be a major reason for decreased yields.

Author's feedback:

This is a very good comment and this question has been considered when analyzing and interpreting the data.

We have added these sections in the revised version 2 to help clarify the context. We have added references to support the statements

Results (added section)

Data on soil fertility has been discussed in [19, 20]. In Gandajika most farmers practice restitution of crop residues season after season and crop fallow system to maintain soil fertility. Interestingly, recent analysis of soil chemistry revealed no significant depletion of soil fertility or increase of soil acidification over the last two decades [19, 20].

Discussion (added section)

Most nutrients in Oxisol ecosystems such as in Gandajika, are contained in the standing vegetation and decomposing plant material. High levels of management can result in ecologically stable oxisols with sustainable productivity. The long term effect of crop residue on cereal and legume productions in different tropical soil types are well documented [35]. The decline in maize production in Gandajika appeared not to be linked to the level of soil fertility but likely the effect of climate variation. Farmers in the targeted region are being advised by local agricultural extension services to plant late in the growing season A.