

Referee: 3

General Comments and Justifications

While the manuscript delves into an intriguing topic by evaluating soil properties, particularly biological ones, it exhibits significant weaknesses that warrant addressing prior to publication. Some of these shortcomings have already been highlighted by colleagues, and additional concerns are listed below:

Justification: Thank you for your comment. It will be well taken and incorporated.

Introduction: This section would benefit from enhancement and expansion to incorporate specific issues pertinent to the studied area. This entails not only referencing cropping systems but also addressing aspects such as water availability, seasonality, cropping practices, etc.

- Line 59: The explanation of the effects of drought and land use patterns is unclear. The text should clarify these patterns.

Justification: Thank you for your comment, In addition to the justification to the previous referees, it can also include that the occurrence of drought can indeed be influenced by changes in land use patterns, which can alter the physical, chemical, and biological properties of soil. Changes in these patterns might increase erosion, lead to compaction, disrupt the regulation of water, and cause loss of soil stabilization, which contributes to the occurrence and severity of drought conditions.

- Lines 78-87: It's unclear whether this information is mentioned in the text. Consider relocating it to the Materials and Methods section.

Justification: Thank you for your comment. It draws the primary objective and focus of the study, providing readers with a clear understanding of the research scope and meaning right from the beginning. By maintaining this statement in the introduction, we ensure that readers are immediately informed about the key aim of our investigation and the specific context in which it is conducted.

Materials and Methods: This section requires more detailed information about the studied area, encompassing climate/weather, soil type, distribution of cropping systems across sampled regions, sampling methodology and year, etc. Additionally, management practices in cropping systems should be elaborated upon.

- How can LWA and CP be compared or utilized as controls? What is the range of precipitation across seasons?

Justification: Thank you for your comment here. Only CP has been considered as a control because it provides a baseline for comparison against other land use types due to consistent water availability having similar environmental conditions such as temperature and soil moisture, which can help minimize confounding variables when comparing microbial biomass and nutrient distribution, soils near ponds may exhibit relatively stable characteristics due to presence of water, crops growing near ponds may present more natural or undisturbed ecosystems.

- The statistical analysis needs further explanation. Did the authors verify the normality of the dataset before conducting ANOVA? What is the significance threshold? Was seasonality the only factor analyzed within cropping systems, or was it also assessed among regions?

Justification: Thank you for your comment; yes, the dataset was verified before being set to ANOVA analysis, and further seasonality and variation among the different cropping systems were assessed.

Results: The results are not thoroughly explored. Consider presenting tables and incorporating statistical findings into figures and/or tables.

Justification: Thank you for your comment and well taken

Discussion: This section is challenging to follow. Providing more contextual details about the study area could enhance readability and comprehension of certain assertions (e.g., L194).

Justification: Your comment on this is well taken and thank you for your comment; here is the explanation: In LWA lands, the proportion of sand is higher than silt and clay compared to other lands with different crops. This might be due to the erosion of finer soil particles such as silt and clay due to lower vegetation cover and activities of agriculture in LWA areas. As limited crops are present in such regions, there will be reduced soil cover and root structure to protect against erosion, leading to the displacement of finer particles by sand. So, soils in LWA have a higher content of sand than silt and clay

Conclusions:

- L302-304: The claim here lacks substantiation.

Justification: Perennial crops with multiple species in the chosen study area have shown much availability of nutrients and microbial biomass.

- L10-316: Consider delving deeper into the implications of this study.

Justification: Thank you for your comment, the line 310-316 states that the present study has provided some insights into microbial diversity within different agricultural systems, further research is needed to thoroughly investigate and understand the full extent of microbial diversity across these systems

Tables:

- Consider including seasons in Table 2 for non-textural parameters.

Justification: Thank you for your comment, the point is noted and addition will be made in the manuscript

- Add statistical analysis results (seasons, cropping systems, regions, depths) to the tables.

Justification: Yes, for almost all tables, statistical analysis has been taken care of; if. In table 2 seasons, if added, then for it, statistical analysis will be carried out.