

Review of: "The impact of land use practice on the spatial variability of soil physicochemical Properties at Wondo Genet, Southern Ethiopia"

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Potential competing interests: No potential competing interests to declare.

While the paper reports data on soil properties for geographical region under-represented in scientific literature, I am afraid this paper does not constitute a significant contribution to the field.

The title appears misleading in that it claims the paper deals with spatial variability, but the results compare land use, not spatial variability.

The abstract does not explain how many different land uses were investigated and this information should be included. Furthermore, the abstract reports mainly results for soil C, N and other soil properties, but does not offer results on spatial variability.

The explanation of the study area lacks important information that precludes a full understanding of how the data were obtained and their statistical significance. Under natural forest land, the land area is stated to be 405 hectares (14.3% of the land area), and exactly the same land area is stated under plantation forest (is this true?), whereas agricultural land was 6.2 percent of the land area. What were the remaining 65% of the land area? When describing changes in soil properties under different land uses it is necessary to also describe when the land use change was initiated (i.e. how long after land clearing...)

A lot of the descriptions in Methods and Materials section do not belong in the Materials section but in the Results section.

The soil sampling section (2.2) misses information on the number of replicates for the plantation forest and agricultural land.

Section 2.3.1 requires more detail. The author refers to the HUSD data base. This requires a reference or a web reference (URL). An explanation of the benefits of kriging has no place in the Materials section, and should be deleted.

In Results and Discussion, the soil porosity appears incorrect. "The natural forest has the highest porosity (0.685%)...". Again, the explanation of changes in soil properties under different land uses does not belong here. Results that are not statistically significant should not be discussed further, please only discuss results that are significant.

Table 1 footnote. Means are reported with a measure of separation “Values with distinct superscripts in each column and row are substantially different from each other”. It is not clear which letter refers to within-row and within-column comparisons. Also, part of the foot note is not matching up with what is shown in the table.

The paragraph just before 3.2 contains statements that are not supported by the data and should be deleted or corrected: “Podocarpus plantation....as well as fewer disturbances.”

Section 3.2 just before Table 3. Among plantation forest....organic matter mineralization.” Is a repetition and should be deleted.

Table 3 footnote not matching the content of the table.

Section 3.3 needs to be omitted completely. These are not properties that have been measured, but taken from a database. The resolution of the database appears to be insufficient to distinguish land uses, and it is unclear to me why this information is presented. The title suggests that spatial variability has been investigated but the presented information comes from a database. Are the data shown in the maps based on the measured data? If not, the figures should be deleted as well.

3.4 Geostatistical analysis. It is not clear to me what the purpose of this section is, please clarify.

There are quite a few spelling and grammar mistakes that need to be corrected (e.g. Eucalyptus, Grevillea, Cupressus).