

Manuscript Number: **sustainability-2087491**

Title: **Unlocking the land capability and soil suitability of Makuleke farm for sustainable banana production**

Comments and Suggestions for Authors

General

In general, the manuscript has tried to present the capability and suitability analysis for banana production in Makuleke. Comparable analysis between suitability and capability approach for 12 hectares of a banana plantation for smallholders. An example is a detailed analysis of soil capability analysis as well as soil suitability assessment for a banana plantation.

Abstract

okay. Starts with a good introduction sentence, the first sentence followed by common problems faced by the farmer for smallholder plantations. Two objectives are mentioned and explained, and the methodology and result are highlighted

Introduction

The paragraph is started with the global issue of the sustainability of land use and then narrows it to the study area problem. Good introduction. The following paragraphs are also okay and provide scientific evidence for suggestions to avoid land degradation and management practice at the farmer level to maintain the soil in good condition

Study area

Provide location and figure, why your figure does show grid or at least the coordinate or insert map of South Africa.

Methods

In general, the research methodology is well-explained and organized. Why do you use the land capability as well as the land suitability approach for spatial mapping of the area? In fact, the result you show mostly explains about suitability result. The manuscript mentions average temperature and annual rainfall (lines 77 and 78); it is a good idea to mention the minimum and maximum temperature of the study area as well as what class of rainfall (dry, wet, or another category). Detailed soil surveys and soil samples collected are discussed in the methodology. This is a good description of the methodology. Soil sample for each dug soil pit was collected, and how many kilos per pit (average)? Was it using a ring sample or just loose soil collected? In the laboratory to soil physical and chemical properties analysis, I do not see your analysis of the phosphorus, calcium, or Nitrogen content as part of the chemical analysis to see the fertility rate of the study area. This is one of the criteria for assessing the suitability result. Table 1. Why didn't you put temperature or elevation as part of the limiting factor for suitability class analysis? If referring to FAO suitability criteria, it should put another limiting factor for land suitability analysis (see FAO Guidelines for Land suitability analysis.)

Results

According to the findings, the result has been presented, but I consent to Figures 1, 2, 3, and 4; what is the map scale of these maps? It shows the scale for the insert map, not the main map. For map 4, you present the suitability class, S1, S2, S3, and N; this symbol is usually followed by limiting factors such as S2s for physical and artistic as limiting factors. Otherwise, you just mention only class level, not subclass level. However, your field survey and laboratory analysis results are good enough to present your results until the subclass level for suitability classification.

Discussion

Well summary of the results presented

Conclusion

In conclusion, the author has put the important findings