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Manuscript entitled "**Development of a composite soil degradation assessment index for cocoa agroforests under tropical conditions of southwest Nigeria**" is interesting. Introduction part is written comprehensively. Materials and Methods, Results and Discussions, and Conclusions need some revision particularly in the selection of minimum data set (MDS) and its statistical correlation part. The paper has thoroughly been reviewed and observed that, in its present form it may not find its suitability for publication hence, may be asked to submit after incorporating following specific comments.

**Specific Comments**

1. *Site selection/Soil sample collection for laboratory analysis:*

Line 146, 154 & 159 :

Statement given contradicts each other. Because, reconnaissance soil survey was done during March-April 2013, whereas soil sampling was done in May 2013. Further, research plots were visited several times: for what and when??

Line 149: Cocoa stands of different ages is not clear

Line 150: Size of each plot not mentioned

No information provided about spacing between cocoa plants in each plot and is there and inter crop or vegetation exists in the study plots.

Line 162 & 166: The *cacao tree* can be as tall as 8-12 m with tap-roots about 1.5 to 2 m deep. Hence, soil sampling should be for both surface soil (0-30 cm) & sub-surface soil (30-60 cm).

2. *Physico-chemical & Statistical Analysis and index development*

- i) As Cocoa plantation was developed under Slash & Burn (shifting cultivation) area having humid tropical climate in rain forest area with more than 1400 mm rainfall, parameter related to soil erosion is essential to assess the soil degradation processes due to surface soil losses every year.
- ii) Nitrogen, potassium and base saturation are important parameters which reflect the nutrient status of the soil in relation to plant growth. Changes in these indicator reflected the combined effects of soil quality. These parameters have PC value more than >0.60 as per Table 1 and need to be included as minimum data set (MDS) in addition to Fe for better reflection of soil degradation scenario.
- iii) Table 2, Table 3 and Table 4 should be rearranged in the order of (i) physico-chemical properties (BD, WHC, porosity, Base saturation, pH, EC & clay content), (ii) chemical properties (N, P, K, Ca, Mg, Fe, Zn, Cu, Mn & Na), and (iii) biological properties (org. C, Earthworm population).
- iv) In case of micronutrients, only Zn, Cu & Mn were included. What is the reason of excluding iron (Fe) which is most important micronutrients besides Zn. Cu and Mn may not be very important as soil is acidic.

- v) Correlation coefficient given in Table is not appropriate as per relationship of different physico-chemical properties of soils. Correlation required to be done in following manner to get a real relationship:
  - Micronutrients (Fe,Zn,Cu, Mn), P and Ca Vs pH
  - CEC and Porosity Vs Clay and Org. C
- vi) Information on average value (in range) of all the parameters analysed/studied is not provided for checking the actual fertility status of soil of the study area. This need to be included.
- vii) Fig 4 may be deleted
- viii) Table 1: In sand, silt and clay analysis (%): write *International* Pipette method. This is very old method and reference given is of year 2002. Please check all the references and its style as per journal again.

Keeping in view the relevance and dimensions of the study Results & Discussion, Conclusions & Abstract need to be revised. Author(s) may be asked to resubmit it after taking care of all the grey areas.