

## ***Interactive comment on “Estimations of soil fertility in physically degraded soils through selective accounting of fine earth” by M. S. Nagaraja et al.***

### **Anonymous Referee #2**

Received and published: 12 March 2016

This paper showed a great efforts by the authors to measure soil organic C, available nitrogen (N), phosphorus (P) and potassium (K), and estimated stocks using three methods (generalized soil mass, bulk density based soil mass and the proportion of the fine earth volume) for soils from physically degraded lands in Eastern Dry Zone of Karnataka State in India. In this paper a relevant topic of soil science is worked in a non current study area. However, the methods did not present novel concepts or tools about soil properties in land degraded areas. I find the applied methods are correct and the obtained results are useful about a non typical study area (India). The results are sufficient to support the interpretation and conclusions, but the authors should work more in the discussion and to clear the applied methods. The description of the

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methods (soil collected samples and soil analysis are not clear for me). In conclusion, I think that the paper could be really interesting for the journal, but after some important revisions. Thank you very much for the

Firstly, I suggest general comments and finally, attached, the authors can observe some appreciations to improve and to reach, in my opinion, a higher scientific quality of the paper.

1) Title: I find the title is very clear, but maybe not very “interesting” or “attractive”, because I think that in any moment the authors speak about soil fertility. The paper talks about an interesting correlation between the gravels and soil nutrients.

2) Key words: I didn’t find this part.

3) Abstract: There aren’t any explanations about where is developed the work and the aims.

4) Introduction: the authors must include more actual bibliography. Furthermore, there are more affirmations without citations. Finally, the aims of this work aren’t clear, please, make a concrete paragraph only with the goals: i). . . ; ii). . . ; iii). . .

5) Methods: Please, attach more information about the study area, soil samples (where, how many, why. . .). When you classify the soils, you must use actual and international “soil classifications”, which all authors around the world can understand: USDA (2010) or FAO-WRB (2014). You should improve the statistical method description, because there are a lot of lakes about type of correlations, statistical programs. . .

6) Results: Please, make separated the results and discussion. In the results, you must improve the description of the results (correlations, numerical descriptions). . . descriptions please, non conclusions or discussions. I recommend that you should use always the same nomenclature in all the text. In this moment, all is a little confuse: estimations/estimates; C/GSM; BD SM or BD???

7) Discussion: Please, put more attention in the author guidelines with the information

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about what is it a discussion. You should make a comparison between your results and others of different authors, and discuss methods, results and ideas. You need more bibliography. I suggest some references for the introduction too.

8) Figures: Figure number 1 needs coordinates, more information about soil sample locations. Figure 2, 3 and 4: I suggest to separate the correlations in tables, to clear the nomenclatures and the legend (symbols, lines. . .) and to reduce the decimals in the numbers.

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Please also note the supplement to this comment:

<http://www.solid-earth-discuss.net/se-2016-26/se-2016-26-RC2-supplement.pdf>

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Interactive comment on Solid Earth Discuss., doi:10.5194/se-2016-26, 2016.

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