

Interactive comment on “Using ordered weight averaging (OWA) for multicriteria soil fertility evaluation by GIS (case study: southeast Iran)” by Marzieh Mokarram and Majid Hojati

Anonymous Referee #3

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General comments:

In this manuscript, Marzieh Mokarram and Majid Hojati present a study on the analysis of soil fertility by multi-criteria analysis, i.e. Ordered Weighted Averaging in the west of Shiraz, Fars province in Iran. The manuscript is in general not well organised and the contents of the different sections are intermixed. The methods are not adequately explained and lack accuracy. The discussion needs some work, e.g. the authors should discuss their results in a more global context using more updated references and argue about the application of these results at different scales by decision-makers. Also, the manuscript needs to be revised by an English native speaker as it contains several grammar errors. See below some specific comments.

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Specific comments:

Abstract: - Line 12: remove 'The' and 'the'. - Line 14: what do you mean with 'effective factors of the natural science'? - Line 23: the sentence 'a farmer can accept more risk it can use more areas...' does not make a lot of sense. - Lines 29-30. Rewrite that sentence, does not make sense ('..by decreasing the risk (no trade-off), increasing the risk..') Keywords: I suggest using different words than those from the title.

Introduction:

More updated references that not only focus on the area of Iran should be included here. Page 2. Lines 41-42. The following references should be in chronological and then alphabetical order. Please check across the manuscript, e.g. Salehi et al., 2012; Feng et al., 2012; Ashrafi et al., 2012. Page 3, lines 56-58. The objectives of the study should go at the end of this section.

Study area.

This section should be included within the 'Materials and Methods' section. Please check the manuscript preparation guidelines of the journal: http://www.solid-earth.net/for_authors/manuscript_preparation.html Please, be specific with the climatic classification of the study area. 'This city climate is categorized as a hot semi-arid one' is not very clear. And the same goes for 'Winters are cool with an average of freezing temperature in December and January'. What are the mean/average temperatures and the annual rainfall?

Page 4; line 96-97 The majority of Shiraz populations are Persian. This is not really relevant to the study, is it?

Pages 4-5; lines 102-120. Why do you use numbering here? It is confusing.

Figure 1. This figure does not reveal much. Where is the study area located within the country?

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Methods/Results sections:

Table 2. How were these parameters measured? Number of replicates, methods, equipment, etc.. Methods rely on these parameters but you do not provide any information... Moreover, the actual explanation of your methods (e.g. soil sampling, modelling, etc.) is included in the results section instead. Please, organise your sections according to the guidelines. In any case, the methods are not fully reliable, as the authors do not test the interpolation and the baseline information is not explained in detail and its quality cannot be determined. Also the sampling method is confusing. Was it a random sampling or a sampling focalised on wheat fields? The weighting method is also not explained. Please specify all these issues.

Discussion

The discussion is very poor. You need to elaborate on this section and connect your results (maps) to properly discuss the fertility status of these soils. How is this study important to decision-makers?

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