

***Interactive comment on “Erosion risk assessment and identification of susceptibility lands using the ICONA model and RS and GIS techniques” by Hossein Esmaeili Gholzom et al.***

**Anonymous Referee #1**

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General remarks This is a rather confusing manuscript for several reasons. The most important issue is the language. I advise the authors strongly to use a professional, native English translator for improving the language. Furthermore, the objective of this study is not clearly described. In the end, the erosion risk assessment using the ICONA model is compared with an existing result from the PSIAC model, without a discussion on the comparison. In 3.3, it is stated that high erosion intensity is not observed in the study area (line 277) (not clear where this is coming from), but no discussion on this outcome is made for discussing the results from the ICONA model.

I regret to state that this manuscript is unacceptable. If the authors present this in a

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better way, indicating clearly the objectives, describe the validation of the results, put the results in perspective and discuss the consequences of the outcome in terms of possible focus areas for soil conservation, this may become an acceptable manuscript.

Specific remarks: 1. Line 31: present and describe the different models. You have listed here just a sequence of models without categorizing them in e.g. empirical versus process based, different timescales (event based, annual), different spatial scale. 2. Add more literature on erosion models and erosion risk assessment studies. 3. Line 38: why is it necessary to find ‘quick and timely solutions’? 4. The introduction contains a lot of redundancies, try to funnel a bit more starting from the broad description of erosion models, risk assessment, the study site situation, and your objectives in this. 5. Section 2.1: I miss data of the climate for the study area. 6. Section 2.2: this sounds like a lot of work done for gathering the input data, but nowhere are results or a discussion of this procedure presented. Only the final map is presented. 7. Line 104: so you validate your model result with outcome of another model? That is no guarantee that results are reliable. 8. Table 1: Caption does not explain what is in the Table, what is MB, M, B, a, b, c etc.? 9. Table 3: what is K-factor? 10. Legend Fig 3: ‘Very low’ is lower than ‘Low’, so sequence should be adapted. Swap colours for ‘Steep’ and Very steep’ (red is normally worse than light red) 11. Line 201-202: this procedure should be explained in ‘methodology’, and a discussion on the outcome should be presented. What do these figures imply? 12. Fig. 6: Colours and legend seem to be mixed here, use the same colours as for Fig 3. 13. Fig 7b: Legend is not in sequence of severity (‘low-moderate-very low’, should be ‘very low-low-moderate’?) 14. Line 315: what is ‘human erosion’? 15. Line 353: where is the conclusion that the erosion risk map is ‘sufficiently accurate’ based on? There is no ground prove (measured data) for this presented. If it is based on the comparison between models, then I would have expected a better discussion on that, and the limitations of this procedure explained.