

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1  
<https://doi.org/10.5194/nhess-2021-376-RC1>, 2022  
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## Comment on nhess-2021-376

Anonymous Referee #1

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Referee comment on "First application of the Integrated Karst Aquifer Vulnerability (IKAV) method – potential and actual vulnerability in Yucatán, Mexico" by Miguel Moreno-Gómez et al., Nat. Hazards Earth Syst. Sci. Discuss.,  
<https://doi.org/10.5194/nhess-2021-376-RC1>, 2022

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The paper present novel concept and approach to vulnerability assessment. The paper address relevant scientific and technical questions within the scope of NHES. The scientific methods and assumptions are valid and outlined clearly. The title and the abstract are easy to understand to a wide and diversified audience.

I have only few more technical issues that need clarification and/or improvement.

Comments:

- **line 83-84:** "Yucatan presents interesting characteristics such as high doline (cenote) density areas, regional faults, and a nearly flat topography for most of the state (Figure 2)." - **on the Figure 2 it is not clearly visible that cenotes are very dense nor a fact that topography is nearly flat. Suggestion is to add second map (maybe Figure 2a) that will show geomorphology (as 3D relief map) more clearly, with markation of cenote areas. And Figure 2 will become Figure 2b.**
- **line 105:** „Figure 3: Administrative and anthropogenic characteristics in Yucatan. In a), the hydrogeological division and population density by municipality ...“ - **I cannot see the hydrogeological divisions (presume this areas: Coastal Area, Inner Cenote Ring, Central Plain and Valleys and Hills) in this Figure, only demographic characteristics of the area. The hydrogeological divisions have been shown in the Appendix A.**
- **line 186:** maybe to increase font size in the Figure 5
- **line 290:** this map is the most important, should be larger in size
- **lines 315-323:** this data would be much easier to understand in a table