

Geosci. Model Dev. Discuss., referee comment RC1
<https://doi.org/10.5194/gmd-2022-194-RC1>, 2022
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Comment on gmd-2022-194

Elco Koks (Referee)

Referee comment on "Reconstruction of past exposure to natural hazards driven by historical statistics: HANZE v2.0" by Dominik Paprotny and Matthias Mengel, Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2022-194-RC1>, 2022

First of all, my apologies that it has been taken so long to start this review. I did start it a several times but this manuscript is so long that it was hard to do it in between other activities. This is actually also directly one of my main critiques of the article. While I appreciate the level of detail and nuance in this article, in particular when it comes to the reproducibility of scientific work, I really do suggest to restructure the manuscript. I would really suggest to make a much more concise version as the main article (of roughly 7-8k words). Many more elements of the main manuscript can be moved to the supplementary to substantially improve the readability. Not everyone is interested in all these details and the interested reader will always know where to find it.

- Some suggestions that (in my opinion) could really be moved to a supplementary:
 - Table 3 and Table 4 would perfectly fit into a supplementary materials.
 - Or well actually, I would suggest to move 2.4 almost entirely to the supplementary and only discuss the key steps in the manuscript. It would substantially improve the readability of the paper.
 - Table 7 could also be moved to a supplementary
 - Table 9 could be moved to the supplementary. Does it not tell a similar story compared to Figure 9?
 - Table 11 could be moved to the supplementary.
- I do like the results and they clearly show the valuable use of the new dataset. I think this section has overall a decent length, just some tables could be moved (as suggested in my previous comment).
- Some small comments:
 - Line 21-23: I am not really sure what the authors are trying to say with this sentence?
 - Line 53: I disagree that impact data are increasingly available. Granular-level impact data is still almost non-existent. At least in the public domain.
 - Line 88: odd sentence, feels more something to add in the cover letter? Or perhaps by now a reference can be made to that other piece of work?
 - Line 848: should it say "any other domain"?
- Due to the size of the manuscript, I did not attempt to really check for grammatical errors or errors in any of the mathematical functions. I would be happy to do that in a

revised, more concise version of the manuscript.

To conclude. I do think this is really a solid piece of work. The HANZE dataset fills a very important gap in the current availability of (spatial) socioeconomic historic data. The work done is very thorough and I very much appreciate that the authors did as much as they could to ensure transparency and reproducibility of their work. I would simply make the main manuscript more concise and move multiple parts to the supplementary. That would make the manuscript really much better and most likely also much more read.