Natural Hazards
and Earth System
Sciences

Open Access

EGU

Discussions

Interactive comment on "Analysis of applicability of flood vulnerability index in Pre-Saharan region, a pilot study to assess flood in Southern Morocco" *by* A. Karmaoui et al.

Anonymous Referee #1

Dear authors, I have read the paper with interest. It is an informative text on the application of an existing method. The idea is to provide an assessment on a case study, in Southern Marocco, and promote the interest of use a so-called composite indicators, here the FVI - Flood Vulnerability Index. If the method is then not new, the case study could remain relevant and the subject matter would be of major interest only if this paper is substantially revised. Lastly, the paper needs major rewriting; there are multiple grammar errors and language grasp. In my view, this paper requires major revision to be published.

[specific comments] First of all, I would suggest a simpler title by removing [to assess flood], that is obvious with FVI in the first part. I had difficulties with the abstract, which

should be rewritten. It has to point out shortly the arguments that explain why is it interesting and relevant to apply FVI in this case. In general, the text is quite poorly written, with too long sentences, sometimes incomplete and needs major rewriting for sense and flow. The introduction has to be reformulated as well. Try to explain better or make more explicit the links what you are deal with. For example, you start with dry lands and droughts. Would it be more efficient just to explain that CC may increase extreme events (like drought and floods) in an area already affected by natural hazards? And then, as floods seem the most impacting hazard, you have decided to focus on it. ... It is often the case that you suggest unclear causal relationship (date palm trees die, but why ? Precise the link with floods,...). In addition, you wait a bit too much before defining vulnerability. That makes imprecise the employment of this term before (sometimes used in the singular or plural forms). In general, the vocabulary is not enough precise "floods are the most dangerous natural disasters". Dangerous doesn't suit very well and, moreover, if you mean that in terms of affected people and damages, you have to refer to table 2 (and not only fig 1 and table 1). Before the fig 1, there is a sentence within any previous link. Explain why suddenly you speak about dams. The end of the introduction (the last 8 lines) needs to be clarified and the sequence of tenses (here and in the other part as well) deserves to be considered. Some repetitiveness could be removed (in fact,...),that easily can be fixed. In the Materials and Methods section, do you mean "benchmark" instead of indicator in the first sentence? It sounds clearer to me. At this stage, the article is not very well-structured as you find the description of the studied sites and nothing about the materials (the indicators or sources of data you will use...) or methods. It appears after, in the section "methodology". This has to be revised and reorganized. Table 3 is useless. Just give this information in one sentence directly in the text, as you did before, with the other examples. In the methodology part, it was not easy for me to link the equation with the three terms (exposure, susceptibility and resilience), which are not defined – and the four components. The table 4 clarifies that, but a description in the text should be given. In the description of each component by unit (urban scale or sub-catchment), be careful about you use of the vulnerability

term (it's only a part of the vulnerability which is highlighted. . .the social part, or physical and so on). Concerning the description of procedures , they could still be improved. Indeed, they are a bit unclear or some parts are missing; it would be difficult for others to reproduce the study by reading the article. You shoud precise shortly how you treat the data like the missing values, which kind of aggregation method you used, did you apply some ponderations etc. . . (you will find here some indications from the Handbook on composite indicators provided by the OECD/JRC, about how they describe the differents steps : http://composite-indicators.jrc.ec.europa.eu/?q=content/overview). Finally, a better description of procedures will help you to improve the discussion. Some study implications or limitations should be clearly presented. Concerning the adaptive measures or recommendations, it is interesting but it could be relevant to know where they come from (experts, literature, ...). The conclusion contains one of the most interesting assertion which should have lead the article :"an accurate assessement of flood vulnerability is difficult, due to the lack of official necessary data." So how did you manage to surpass this issue? How did you cover the missing data? [and please correct in the text – "data are not data is". . .and "a tool allows", sometimes you forget the "s"] is it a limitation to apply such index method? . . . Figures and tables are fine. The quality and support text are acceptable, except for the fig 2, the scale is missing and the names are not visible. I would only suggest to remove table 2 and perhaps figure 4, if there is no description attached in the text. Please just pay attention that there is a mismatch between table 2 and 3 in the text.