

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC2  
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## **Comment on nhess-2021-216**

Anonymous Referee #2

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Referee comment on "Education, financial aid, and awareness can reduce smallholder farmers' vulnerability to drought under climate change" by Marthe L. K. Wens et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-216-RC2>, 2021

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The paper deals with an interesting topic and is the results of a large research effort by the authors. However, the presentation of the authors' work needs to be improved in several aspects. The study is quite complex and for this reason special care and effort are needed to make it understandable to the reader. I have some major/general comments and then other comments that refer to specific sentences in the text.

### General comments

A better explanation is needed of where this research stands in the literature on the topic and particularly in the body of research by the same authors. E.g., what does this paper add in relation to Wens et al 2020 and Wens et al 2021? Is the contribution of this paper methodological or to the definition of policies in a specific place? Is the ADOPT model something developed by the authors and for this paper? Once this is clarified, the paper should be revised accordingly, in order to make that contribution emerge more clearly throughout the text.

Section 3: the authors should provide more information about the dataset used (e.g. how was the dataset obtained? who was the surveyed/interviewed population? How was it selected?). The dataset is key to understand the paper and its description can not be referred to other papers.

Section 4 Results' structure is confuse. The presentation of the results is very difficult to follow and needs major revision. Maybe the authors could use subheadings and/or tables to guide the reader? Also, some sentences are long and difficult to understand (e.g. lines 216-219; lines 223-225; 231-233). In other cases, it is unclear how the authors came to a given finding/conclusion (e.g. (211-212): some sentences seem to be interpretations of the authors and therefore they should be presented in the discussion section and justified.

Figures 5, 6 and 7 seem to transmit the same message (i.e. that strategic plan is more effective than proactive plan and this in turn is more effective than the reactive one) so maybe they are not all needed. The information about climate scenarios is difficult to read in the figures. Also, the authors should check the journal specifications about figures that should be readable both in colour and in B&W.

Section 5. The discussion should be strengthened and made easier to follow as one gets lost in details and long sentences. Are the results presented in section 4 what the authors expected? If not, what is the reason for that according to the authors? If yes, what does the current paper add to the existing knowledge about the topic?

Section 6 Conclusion. The main messages emerging from the application of ADOPT are difficult to identify in this section. As a suggestion, the authors could use the intervention scenarios to guide their conclusion instead of breaking down their messages in long sentences that list different types of drought adaptation measures, barriers, interventions etc. For instance, from the conclusion the reader does not get a key message that emerges from the figures in the results, i.e. that after only 10 years, drought risk reduction is much higher and stable in the strategic interventions scenario than in the other two scenarios.

The paper needs to be carefully proofread as there are numerous typos both in the manuscript and in the Appendices. The structure of several sentences is unclear and would benefit from a linguistic revision.

Specific comments:

Abstract. What does "(non-) governmental" mean in this context? It should be specified the first time this term is used.

Line 27: please revise the use of "erratic" or "inadequate" adjective to define rainfall. These terms suggest that there is an "adequate" rainfall pattern, which that is a human construct

p. 4 please add a map of Africa to locate the study area in a larger geographical context.

line 96 please spell ODD+D out

line 99 please explain what a choice experiment is.

line 107: the expression "has proved to best describe" seems to overstate the goodness of the approach. The PMT may have performed well in the cited research but there is no way to say that "best describe".

line 165-166 : sentence is unclear

line 314 "a different effect" of what?

Line 319-321: why do the authors think there is this different in effects in drier climate and hotter climates? What is the assumption in terms of adoption of measures any farmers and implementation of interventions?

Line 329: why the proactive government scenario is not useful under dry conditions? On line 336, the authors say that it reduces emergency aid under all possible scenarios.

Lines 178-183: the description of these findings is unclear. What does this paper add to the findings of Wens et al 2021?

Section 6 - conclusions: the first two paragraphs are repetitive.

Line 354: in several parts of the text the authors talk about "cost-effective interventions": how could they assess cost effectiveness if they didn't know their costs?

Line 357. I am unsure that it can be considered a decision support tool if it is not predictive.

Line 378. what does "unknown drought adaptation measures" mean? Unknown to/by whom? "cost-effective but expensive" is an unclear concept: maybe the author means that they are more expensive compared to other measures? Expensive should be in relation to something, it is not an absolute term.