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Comment on nhess-2021-152

Anonymous Referee #4

Referee comment on "A geography of drought indices: mismatch between indicators of drought and its impacts on water- and food securities" by Sarra Kchouk et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-152-RC4>, 2021

The paper addresses an important topic and provides new information based on an innovative approach to analyze the usage of drought indices. The authors used the Scopus database to review several aspects of the use of these indices in the scientific literature. Drought indicators are frequently used not only in a scientific context but also for several practical applications. The results are therefore worthy to be published, but I have one concern related to methodology and conclusions.

Reviewer 1, 2, and 3 already gave a number of detailed comments and I am therefore not going into such details again.

If I understand the methodology and database queries correctly, the authors ignored the temporal development in the use of the indices. In section 2.2 the authors explain that the articles were published between 1960 and 2021. I assume that within this period there have been significant changes in the usage of the indices. Such changes might have been caused by improved data availability (either due to changes in data policies, data exchange, or new observing systems (e.g. availability of satellite data)), but changes could also be related to scientific progress or a change in the societal view on droughts (i.e., increased security issues in some regions or decreased risks due to improvements in the related infrastructure, etc.). Population, income, and economic activities have significantly changed in many regions over that period. It might be possible that some indices have been used more often in the past, e.g., those that require only a small availability of input data.

In my understanding, the results and conclusions do therefore not necessarily represent the current practice in the use of the indices. Some of the recommendations of the authors might therefore already been implemented, but if that is the case, the reporting on that might just be part of the most recent literature and therefore only be mentioned in a small number of papers.

I would therefore suggest that the authors provide some additional remarks to what extend the results reflect the current practice and if there are indications for a change during the decades since 1960. If the authors have indications that there is no significant change over time then this should be explained in the discussion sections. Otherwise, restricting the database queries to selected decades could be an approach to illustrated

changes in the usage statistics.