ESSDD

Interactive
comment

Interactive comment on "A pan-African high-resolution drought index dataset" *by* Jian Peng et al.

Anonymous Referee #2

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Comments on the manuscript entitled "A pan-African high-resolution drought index dataset"

Drought is recurring and posing a certain threat to water resource and food security around the globe. Accurate and timely monitoring of droughts is essential for many applications to mitigate the potential impacts. The study aimed to generate a new high-resolution drought monitoring dataset with satellite observations, which provides a timely contribution to the scientific community. I think the produced product has a great potential to benefit drought study in Africa. To the best of my knowledge, high resolution drought dataset is not existing in the community. The widely used SPI/SPEI indices are normally based on interpolated ground measurements and have spatial resolution of 0.5 degree ($\sim$50 km). The use of satellite products is a novel way, and

should be highly encouraged. Although 5 km is still quite coarse for agriculture applications, it might be useful for other applications e.g., regional hydrological/meteorological drought monitoring. Based on my review, I think the presented dataset adds great values for drought related applications in Africa. The manuscript is well written. The newly generated product is clearly described. I have a few fairly minor comments/suggestions below for the authors to consider for further improving the manuscript.

1. Unlike other hydrological disasters such as flood, drought is very hard to define. To this regard, there are no agreements on its definition and hundreds of drought indices have been proposed in last decades. Why do the authors choose SPEI? Why not using PDSI or others widely recognized and used index? For practical applications, how should end-user use your dataset to monitor drought? The information is missing in the manuscript, and I advise the authors to elaborate on this aspect.

2. Drought is a global disaster and deserves research at global scale. As far as I know, the satellite products used in your dataset like CHIRPS, GLEAM cover nearly entire globe (e.g. 50 dgree N-S). Why do you only focus on Africa? Why not extending to the global scale?

3. Regarding evaluation of your dataset, indirect comparison is definitely informative. Direct evaluation against ground-based measurements is essential. This part is missing in the current manuscript.

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