Review of: "Drought Risk in the Mahanadi River Basin: A Multidimensional Approach for Integrated Urban-Rural Drought Management Strategies"

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Potential competing interests: No potential competing interests to declare.

The manuscript entitled "**Drought Risk in the Mahanadi River Basin: A Multidimensional Approach for Integrated Urban-Rural Drought Management Strategies**" offers a thorough and methodologically robust analysis of drought risk in the Mahanadi River Basin, India, incorporating a comprehensive set of parameters including hydrological, meteorological, agricultural, and socio-economic. While the annual average rainfall in the Mahanadi River Basin is relatively high, the seasonal and spatial distribution can lead to drought risk despite overall rainfall levels. This work advances drought risk modeling, providing a solid framework for data-driven decision-making to support sustainable drought management. Moreover, future researchers can use this approach to analyze drought in other regions with similar conditions by adapting the model's criteria to local conditions. The inclusion of up-to-date, high-resolution data and more advanced techniques in future work could further refine this approach's precision. However, there are some minor revisions from my side that should be addressed before publication.

1. Write the full form of ROC in the abstract, as it appeared first in the manuscript; do it for all the abbreviations in the manuscript.
2. In the Materials and Methods section, first sentence, please rephrase this sentence, "in this present assessment?" You can write as "in this assessment," "in the current study," or "in this study"; correct such types of sentences in the whole manuscript, and write scientifically.
3. Most of the data is collected until the year 2018 or 2019; why not the further years until 2023 or at least 2022? Is there any specific reason?
4. Validation of the drought risk assessment needs justification; explain how the data was organized and processed for the analysis of validation, instead of explaining the axis and exaggerated literature.
5. Alternative ranking and standardization criteria layer the equation for the standardization of the map (p = x – min/max – min); please correct it; P is not straight to the formula.
6. As mentioned in points 2 and 4, please avoid unnecessary words and sentences throughout the manuscript. Write scientifically.