

Review Form 3

Journal Name:	International Journal of Environment and Climate Change
Manuscript Number:	Ms_IJECC_122288
Title of the Manuscript:	Spatial variability of monsoon rainfall trend over West Africa
Type of the Article	Original Research Article

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.		
Is the title of the article suitable? (If not please suggest an alternative title)		
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.		
Are subsections and structure of the manuscript appropriate?		
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.		
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. =		

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<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>		
<p>Optional/General comments</p>	<p>* Spatial variability of monsoon rainfall trend over West Africa *</p> <p>Article presents an updated analysis of rainfall variability and trends during the West African monsoon season from 1960 to 2022. The authors examine spatial patterns and trends across three time periods (1960-2022, 1963-1992, and 1993-2022) using monthly gridded rainfall data, focusing on the core monsoon months of June through September.</p> <p>The study employs multiple statistical techniques, including trend analysis, change point detection, and spatial pattern analysis. The authors use ordinary least squares regression for trend analysis and three change point detection methods: Pettitt's test, Buishand's range test, and the Standard Normal Homogeneity Test.</p> <ol style="list-style-type: none"> 1. Significant changes in rainfall variability were detected for all monsoon months except August. 2. Both positive and negative trends were observed, indicating shifts towards wetter and drier conditions in different regions. 3. The 1963-1992 period showed widespread decreasing trends, especially in the Sahel, corresponding to known historical drought periods. 4. The 1993-2022 period revealed a more complex pattern, with some areas experiencing rainfall recovery while others continued to dry. 5. Specific regions, such as the western Sahel, showed significant increases in rainfall, while parts of the Guinea coast experienced pronounced decreasing trends. <p>Here highlights the importance of these findings for water resource management, agriculture, and socio-economic stability in West Africa. They note that regions experiencing increasing rainfall may face challenges related to flood management and soil erosion, while areas with decreasing trends must address water scarcity and food security issues. This study contributes to the existing body of knowledge by providing a detailed analysis of rainfall variability over an extended period and for each monsoon month. The authors argue that this comprehensive approach will enhance the development of effective mitigation and adaptation policies to address climate change and disaster risk impacts in West Africa.</p> <p>The strengths of this study include its use of long-term data (1960-2022), the application of multiple statistical techniques, and the focus on individual monsoon months rather than just annual or seasonal averages. This approach allows for a more nuanced understanding of rainfall variability and trends in the region. However, there are some limitations to consider. The study relies on gridded observational data, which may have inherent biases or uncertainties, especially in areas with sparse ground-based observations. Additionally, while the authors mention potential drivers of rainfall variability, such as sea surface temperature anomalies and land-use changes, they do not explore these factors in depth. The article is well-structured and provides a clear presentation of methods and results. The inclusion of multiple figures illustrating spatial patterns and trends enhances the reader's understanding of the complex rainfall dynamics in West Africa. The authors also provide a thorough discussion of their findings in the context of previous research, demonstrating how this study builds upon and extends existing knowledge.</p> <p>One area where the article could be strengthened is in its discussion of the implications of these findings. While the authors mention potential impacts on water resource management and agriculture, a more detailed exploration of how these rainfall trends might affect specific sectors or communities would enhance the practical relevance of the study. The authors conclude by calling for future research to focus on understanding the underlying mechanisms driving these changes in rainfall patterns. This suggestion highlights the importance of linking observational studies like this one with process-based research to improve our understanding of climate dynamics in West Africa. Overall, this article makes a valuable contribution to our understanding of rainfall variability and trends in West Africa. By providing an updated and detailed analysis of monsoon rainfall patterns, it offers important insights for climate scientists, policymakers, and stakeholders working on climate adaptation and resilience in the region. The study underscores the complexity of rainfall patterns in West Africa and the need for continued monitoring and research to support effective climate change adaptation strategies.</p>	

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PART 2:

	Reviewer's comment	Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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