Review Form 3

Journal Name:	**International Journal of Environment and Climate Change**
Manuscript Number:	**Ms_IJECC_130542**
Title of the Manuscript:	**Quantifying climate change resilience in agriculture: Regional level indicators-based assessment and agro-climatic zones wise mapping for 102 districts of central India**
Type of the Article	**Original Research Article**

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
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PART 1: Comments

	Reviewer's comment	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.	This manuscript makes a significant contribution to the scientific community by offering a comprehensive framework to assess and map climate change resilience in agriculture, specifically for the 102 districts of central India. The development of the Composite Climate Change Resilience Capacity Index (CCRCI), which integrates diverse indicators across climate, agricultural productivity, and adaptability, provides a unique tool for understanding regional vulnerabilities and strengths. By categorizing districts into high, medium, and low resilience zones, the research highlights critical areas requiring targeted interventions, particularly in agro-climatic Zones VII and IX, where climate exposure and limited adaptability pose substantial risks. The findings can inform policymakers, agricultural planners, and researchers in formulating region-specific strategies to enhance climate resilience and mitigate the adverse impacts of climate change on agriculture. Furthermore, this study lays the groundwork for future research on sustainable agricultural practices and adaptive strategies in response to evolving climate patterns.	
Is the title of the article suitable? (If not please suggest an alternative title)	The title of the article, "Quantifying climate change resilience in agriculture: Regional level indicators-based assessment and agro-climatic zones wise mapping for 102 districts of central India," is quite descriptive and informative. However, it could be made more concise while retaining its clarity and relevance. Here's a possible revision: "Assessing Climate Change Resilience in Central Indian Agriculture: A Regional Indicators-Based Approach and Agro-Climatic Zone Mapping" This alternative keeps the core ideas intact but shortens the wording slightly for readability and impact.	
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.	The abstract provides a comprehensive summary of the paper's objectives, methodology, results, and implications. However, there are a few areas where clarity and precision can be improved. Here are a suggestion for enhancement: *Clarity of Methodology:* While the methodology is well outlined, the specific use of "Mann-Kendall non-parametric trend test" may be unclear to a broader audience, especially in a summary. Simplifying or explaining the test might help. *Suggestion:* "Mann-Kendall trend analysis was employed to evaluate long-term climatic trends (1981-2023) in key indicators such as temperature, precipitation, and soil wetness."	

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Is the manuscript scientifically, correct? Please write here.	The manuscript seems scientifically correct in terms of its methodology and approach, particularly the use of the Mann-Kendall non-parametric trend test and principal component analysis (PCA) for the development of the **Composite Climate Change Resilience Capacity Index (CCRCI). Both of these methods are commonly employed in climate resilience and trend analysis studies. However, one key point to clarify for scientific rigor would be the selection of indicators (50 in total) and their relevance. While the abstract mentions a broad set of indicators covering climate, soil, crop, livestock, and socio-economic factors, it would be beneficial to provide a brief justification for how these specific indicators were chosen and whether they adequately represent the multi-dimensional nature of climate resilience. This will ensure that the methodology aligns with best practices and provides a comprehensive understanding of resilience in the context of the study.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	The references provided are generally sufficient and cover a broad range of relevant topics related to climate resilience, vulnerability, and agricultural adaptation in India. However, there are a few areas where the references could be updated or expanded to ensure they are both recent and comprehensive. Suggestions: More recent articles on climate change resilience: The manuscript mentions important studies on climate change vulnerability but could benefit from additional 2022-2023 papers focusing on India's agricultural adaptation to climate change. Many references are from 2017 or earlier, and it would be ideal to include more current studies or reports. Specific Reference Suggestions: Example 1: Include recent works on climate change vulnerability indices and agriculture adaptation in Central India. Studies such as Chakraborty et al. (2022) or Sharma et al. (2023) on the impacts of extreme weather events in this region would be highly relevant.	
Is the language/English quality of the article suitable for scholarly communications?	The language quality of the article is generally suitable for scholarly communication; however, one important area for improvement is the clarity and flow in certain sections. Specifically, the sentence structure could be enhanced to make complex ideas more digestible. For example, the phrase “Mann- Kendall non-parametric trend test was performed (time series: kharif 1981- summer 2023) for climatic indicators like daily average temperature, precipitation, relative humidity and root zone soil wetness” could be rephrased to increase clarity and readability. A clearer version might be: “The Mann-Kendall non-parametric trend test was applied to climatic indicators, including daily average temperature, precipitation, relative humidity, and root zone soil wetness, over the time period from Kharif 1981 to Summer 2023.”	
Optional/General comments	These additions could enhance the article’s comprehensiveness, practical relevance, and overall impact in the field. Limitations: A discussion of the limitations of the study could help contextualize the findings. For example, how might data gaps, potential biases in indicator selection, or other uncertainties influence the results? Future Research: The article could benefit from a brief mention of potential areas for future research, such as refining the resilience index with additional indicators, testing its applicability in other regions, or exploring how climate resilience interacts with socio-economic factors beyond the ones included in this study.	

PART 2:

	Reviewer’s comment	**Author’s comment** *(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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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