

**Review Form 3**

Journal Name:	<b>International Journal of Environment and Climate Change</b>
Manuscript Number:	<b>Ms_IJECC_121848</b>
Title of the Manuscript:	<b>Spatial-temporal variation in water quality parameters in South Coast estuarine ecosystem, Kenya</b>
Type of the Article	<b>Original Research Article</b>

**Review Form 3**

**PART 1: Review Comments**

<b>Compulsory</b> 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>
<p><b>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.</b></p>	<ul style="list-style-type: none"> <li>• This manuscript is crucial for the scientific community as it provides a comprehensive analysis of water quality parameters in the South Coast estuarine ecosystem of Kenya. By identifying the spatio-temporal variations in these parameters, the study highlights the impact of anthropogenic activities on aquatic systems, which is essential for understanding and managing environmental changes in estuarine ecosystems.</li> <li>• The use of robust statistical methods, such as two-way ANOVA and Principal Component Analysis, adds rigor to the findings, making them valuable for future research and policy-making.</li> <li>• I appreciate this manuscript for its thorough approach to data collection and analysis, which reflects a strong commitment to scientific integrity. The authors' emphasis on the need for long-term monitoring and community engagement in environmental management is particularly commendable, as it underscores the importance of collaborative efforts in addressing ecological challenges.</li> <li>• However, the manuscript could benefit from a more detailed discussion on the implications of climate change on the observed water quality trends, as this is a pressing issue in many aquatic systems today.</li> </ul>	
<p><b>Is the title of the article suitable? (If not please suggest an alternative title)</b></p>	<p><b>Analysing Spatial-Temporal Variations in Water Quality Parameters in the South Coast Estuarine Ecosystem, Kenya</b></p>	
<p><b>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.</b></p>	<p>The abstract of the article is fairly comprehensive as it outlines the purpose of the study, the methodology employed, and the key findings regarding water quality parameters in the South Coast estuarine ecosystem of Kenya. It effectively mentions the twelve sampling stations, the parameters measured, and the statistical analyses used, which provides a clear overview of the research conducted.</p> <p><b>However, I suggest a few additions to enhance its clarity and impact:</b></p> <ul style="list-style-type: none"> <li>• <b>Contextual Background:</b> Including a brief statement about the significance of estuarine ecosystems and their vulnerability to anthropogenic activities would provide readers with a better understanding of the study's relevance. This could help frame the importance of the research within the broader context of environmental science.</li> <li>• <b>Key Findings:</b> While the abstract mentions significant differences in water quality parameters, it could benefit from a summary of the specific findings or trends observed. For instance, highlighting the impact of seasonal variations or specific anthropogenic sources of pollution would give readers a clearer picture of the results.</li> </ul>	
<p><b>Are subsections and structure of the manuscript appropriate?</b></p>	<p><b>Evaluation of Manuscript Structure and Subsections:</b>  <b>The structure and subsections of the manuscript appear to be appropriate based on the provided contexts. Here are some observations regarding the organization:</b>  <b>Clear Sections:</b> The manuscript is divided into distinct sections such as Introduction, Materials and Methods, Data Analysis, Discussion, and Conclusion. This clear division helps in guiding the reader through the research process and findings.</p> <ul style="list-style-type: none"> <li>• <b>Logical Flow:</b> The progression from the introduction, which sets the context and importance of the study, to the methods used for data collection and analysis, followed by the discussion of results, is logical. This structure allows readers to understand the rationale behind the research and how conclusions were drawn</li> <li>• <b>Detailed Methodology:</b> The Materials and Methods section is well-defined, detailing the study area, sampling sites, and the specific parameters measured. This level of detail is crucial for reproducibility and understanding the context of the findings.</li> <li>• <b>Data Analysis:</b> The Data Analysis subsection clearly outlines the statistical methods</li> </ul>	

**Review Form 3**

	<p>used, such as ANOVA and PCA, which are essential for interpreting the results. This transparency in methodology enhances the credibility of the research.</p> <ul style="list-style-type: none"> <li>• <b>Discussion and Conclusion:</b> The Discussion section effectively interprets the findings in relation to the research questions and provides insights into the implications of the results. The Conclusion succinctly summarizes the key findings and recommendations for future management strategies, which is beneficial for readers looking for actionable insights.</li> </ul> <p><b>Suggestions for Improvement</b></p> <ul style="list-style-type: none"> <li>• <b>Subsection Titles:</b> While the sections are clear, using more descriptive subsection titles could enhance readability. For example, instead of just "Data Analysis," a title like "Statistical Analysis of Water Quality Parameters" could provide more context.</li> <li>• <b>Integration of Findings:</b> In the Discussion section, integrating specific findings with broader implications could strengthen the narrative. This would help in connecting the results to real-world applications and the importance of ongoing monitoring.</li> </ul>	
<p><b>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.</b></p>	<ul style="list-style-type: none"> <li>• The manuscript demonstrates scientific robustness and technical soundness through its comprehensive methodology and rigorous data analysis. The use of established statistical methods, such as two-way ANOVA and Principal Component Analysis (PCA), ensures that the findings are statistically valid and reliable, allowing for meaningful interpretations of the water quality parameters across different sampling stations and seasons</li> <li>• Additionally, the detailed description of the study area and the specific parameters measured, including temperature, dissolved oxygen, and nutrient levels, provides a solid foundation for understanding the ecological context of the research</li> <li>• The manuscript also addresses the implications of anthropogenic activities on water quality, highlighting the relevance of the study to environmental management and conservation efforts in the South Coast estuarine ecosystem of Kenya</li> <li>• Overall, the combination of a well-structured approach, appropriate statistical analyses, and a focus on real-world applications contributes to the scientific integrity of the manuscript.</li> </ul>	
<p><b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b></p>	YES	
<p><u>Minor</u> REVISION comments</p> <p><b>Is the language/English quality of the article suitable for scholarly communications?</b></p>	YES	
<p><u>Optional/General</u> comments</p>	NO	

**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> (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)
<p><b>Are there ethical issues in this manuscript?</b></p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

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