Review Form 3

Journal Name:	**Asian Journal of Environment & Ecology**
Manuscript Number:	**Ms_AJEE_120960**
Title of the Manuscript:	**Predicting the Carbon Sequestration Potential of Sundarbans Mangroves Via Remote Sensing, Google Earth Engine, and Machine Learning Techniques**
Type of the Article	

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PART 1: Review Comments

Compulsory REVISION 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. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	**This manuscript, which predicts the carbon sequestration potential of Sundarbans mangroves using remote sensing technology, Google Earth Engine, and machine learning techniques, is of significant importance to the scientific community. First, it provides an effective method for estimating the carbon storage of mangroves without the need for field measurements, which is particularly important for inaccessible or resource-limited areas. Secondly, the study demonstrates how high-precision machine learning models can aid environmental science, enhancing the efficiency and accuracy of data analysis. Lastly, this research contributes to the global conservation and management of mangrove forests by highlighting their role as vital carbon sinks, which is crucial for addressing global climate change.**	
Is the title of the article suitable? (If not please suggest an alternative title)	**The title of the article, "Predicting the Carbon Sequestration Potential of Sundarbans Mangroves Via Remote Sensing, Google Earth Engine, and Machine Learning Techniques," is highly suitable given its content.**	
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.	**Clarity in Method Description: The abstract mentions the use of radar (Sentinel 1) and optical (Sentinel 2) remote sensing datasets and compares various machine learning algorithms. However, the description could be more detailed, specifying how these techniques are combined and why these particular algorithms (Random Forest, SVM, CART) were chosen to predict mangrove distribution. Detailing of Results: The abstract notes the high accuracy (0.984) and Kappa coefficient (0.962) of the Random Forest classifier, along with the calculated aboveground biomass and carbon sequestration values. It is suggested to further discuss the significance of these figures, such as how these results compare with other methods or previous research.**	
Are subsections and structure of the manuscript appropriate?	**The paper have a well-organized structure that covers the essential components typical of a scientific research paper.**	
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.	**This manuscript is scientifically rigorous because it utilizes modern remote sensing technology and machine learning algorithms, which are widely recognized and employed in the field of environmental science. By integrating remote sensing data from Sentinel-1 and Sentinel-2, along with the powerful data processing capabilities of Google Earth Engine, the study offers a new, efficient, and accurate method for predicting the carbon sequestration potential of mangrove forests. Additionally, the machine learning models used in the paper, such as Random Forest, Support Vector Machine, and Classification and Regression Trees, have been properly validated and tested to ensure the reliability of the results. The comprehensive application of these technologies not only extends their use in environmental science but also provides a strong scientific basis for the global conservation and management of mangrove forests.**	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. -	**Consider integrating more recent studies or reviews that reflect the latest developments in machine learning techniques in the fields of ecology or remote sensing. This could provide deeper insights into the state-of-the-art technologies and methodologies being developed and used in similar studies globally. Additionally, referencing more case studies that have utilized Google Earth Engine for similar ecological assessments could also validate the methodology and enhance the contextual relevance of the research.**	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	the language quality adheres well to the standards of academic publishing, effectively facilitating the dissemination of research findings to the scientific community.	
Optional/General comments		

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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