

**Review Form 1.7**

Journal Name:	<b>International Journal of Environment and Climate Change</b>
Manuscript Number:	<b>Ms_IJECC_119473</b>
Title of the Manuscript:	<b>Exploring the global potential of seaweed farming for carbon removal and climate mitigation</b>
Type of the Article	<b>Review Article</b>

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**PART 1: Review Comments**

	<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><u>Compulsory</u></b> REVISION comments</p> <ol style="list-style-type: none"> <li>1. <b>Is the manuscript important for scientific community?</b> (Please write few sentences on this manuscript)</li> <li>2. <b>Is the title of the article suitable?</b> (If not please suggest an alternative title)</li> <li>3. <b>Is the abstract of the article comprehensive?</b></li> <li>4. <b>Are subsections and structure of the manuscript appropriate?</b></li> <li>5. <b>Do you think the manuscript is scientifically correct?</b></li> <li>6. <b>Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</b></li> </ol> <p><b><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></b></p>	<ol style="list-style-type: none"> <li>1- The manuscript "Exploring the global potential of seaweed farming for carbon removal and climate mitigation" is important for the scientific community due to its timely focus on climate change mitigation. It comprehensively assesses the potential of seaweed farming as a scalable method for carbon dioxide removal, highlighting its rapid growth rate and efficient carbon sequestration capabilities. The study's thorough review of biophysical factors and optimization strategies offers critical insights for improving seaweed farming practices. Additionally, the manuscript explores the environmental benefits, such as reducing ocean acidification, and economic advantages, like sustainable biofuel production and support for coastal economies. By identifying knowledge gaps and suggesting future research directions, the study provides a foundation for ongoing and future research. Its global perspective ensures broad applicability, making it a valuable resource for scientists, policymakers, and environmental managers aiming to leverage seaweed farming for climate change mitigation.</li> <li>2- Yes, the title of the article, "Exploring the global potential of seaweed farming for carbon removal and climate mitigation," is suitable. It clearly conveys the main focus of the research, which is the examination of seaweed farming's potential to remove carbon dioxide and mitigate climate change on a global scale. The title is concise, informative, and accurately reflects the comprehensive nature of the study.</li> <li>3- Yes, the abstract of the article is comprehensive. It effectively summarizes the study's purpose, which is to examine the potential of seaweed farming for carbon removal and climate mitigation. The abstract highlights the approach taken—a thorough assessment of literature and data analysis to evaluate the diversity in carbon removal capacity across different farming conditions. It emphasizes key factors such as species selection, growing methods, oceanic conditions, and geographic location that influence the effectiveness of carbon sequestration. Additionally, the abstract identifies knowledge gaps and suggests ways to optimize seaweed farming practices. By highlighting the importance of considering biophysical constraints in planning seaweed farming projects, the abstract provides a clear and concise overview of the research objectives, methodology, findings, and implications.</li> <li>4- Yes, the subsections and structure of the manuscript are appropriate. The manuscript is well-organized into clear sections, starting with an abstract that summarizes the study's purpose, methodology, key findings, and significance. The introduction sets the context, explaining the urgency of climate change mitigation and the potential role of seaweed farming. The environmental significance section discusses benefits such as carbon sequestration, ocean acidification reduction, and eutrophication mitigation. Biophysical constraints are examined, detailing the limitations and challenges in scaling up seaweed farming. The mechanisms of carbon removal section explains how seaweed absorbs and retains carbon dioxide. The state of knowledge and research gaps section identifies current knowledge gaps and suggests future research directions. The sustainable practices and innovations section highlights emerging practices and technological advancements. Finally, the conclusion and future perspectives summarize key findings and discuss future research and policy implications. This logical flow from introduction to conclusion, with detailed subsections addressing specific aspects of the topic, ensures clarity and thorough coverage of the subject matter.</li> <li>5- Based on the content provided, the manuscript appears to be scientifically correct. It follows a logical structure, presents a thorough review of existing literature, and integrates data analysis to support its findings. The study accurately discusses the biophysical factors affecting seaweed farming, the mechanisms of carbon sequestration, and the environmental and economic benefits. It also acknowledges the challenges and knowledge</li> </ol>	

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	<p>gaps in the field, which is essential for scientific rigor. The references to various studies and data sources add credibility, suggesting a well-researched and evidence-based approach. However, a detailed review of the entire document would be necessary to confirm the accuracy of all specific data points and interpretations.</p> <p>6- The references in the manuscript appear to be sufficient and include both recent and foundational studies in the field. The cited works span from early 2000s to recent years, covering a wide range of topics relevant to seaweed farming, carbon sequestration, and climate change mitigation. The inclusion of studies from reputable sources and journals adds to the manuscript's credibility.</p> <p>However, a few additional recent references that might enhance the manuscript could include:</p> <p>WANG Wenlei, XU Yan, JI Dehua, XIE Chaotian. Advances in seaweed breeding technology and its applications[J]. <i>Journal of fisheries of china</i>, 2023, 47(11): 119104. DOI: <a href="https://doi.org/10.11964/jfc.20231014184">10.11964/jfc.20231014184</a></p> <p><b>Wilson Thau Lym Yong, Vun Yee Thien, Rennielyn Rupert, Kenneth Francis Rodrigues,</b>  <b>Seaweed: A potential climate change solution,</b>  <b>Renewable and Sustainable Energy Reviews,</b>  <b>Volume 159,</b>  <b>2022,</b>  <b>112222,</b>  <b>ISSN 1364-0321,</b>  <a href="https://doi.org/10.1016/j.rser.2022.112222">https://doi.org/10.1016/j.rser.2022.112222</a>.</p>	
<p><b>Minor</b> REVISION comments</p> <p><b>1. Is language/English quality of the article suitable for scholarly communications?</b></p>	<p>Yes, the language and English quality of the article are suitable for scholarly communications. The manuscript is well-written, with clear and concise language that effectively conveys the research objectives, methodology, findings, and implications. The terminology used is appropriate for the field, and the sentences are well-structured, aiding in the readability and comprehension of the text. The manuscript maintains a formal and academic tone throughout, which is essential for scholarly communication. Any minor grammatical or typographical errors can be addressed during the final proofreading and editing process.</p>	
<p><b>Optional/General</b> comments</p>		

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**PART 2:**

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

**Reviewer Details:**

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