

**Review Form 3**

Journal Name:	<a href="#">International Journal of Environment and Climate Change</a>
Manuscript Number:	Ms_IJECC_124404
Title of the Manuscript:	<b>Assessment of Groundwater Potential Zones in the Konkan Region Using Geospatial Techniques</b>
Type of the Article	<b>Original Research Article</b>

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**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>	<p>This manuscript holds significant value for the scientific community, particularly for researchers and professionals in hydrology, environmental science, and geospatial technologies. It contributes to the growing body of knowledge on groundwater potential assessment by utilizing advanced geospatial techniques, which are increasingly crucial in addressing global water resource challenges. The study's focus on the Konkan region adds regional specificity, aiding future research and sustainable water management in similar coastal and topographical areas. Its interdisciplinary approach is commendable, offering insights that could inspire further innovations in water resource planning and conservation.</p>	
<p><b>Is the title of the article suitable? (If not please suggest an alternative title)</b></p>	<p>Yes, the title is suitable.</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 should be re-written to capture the aim, methodology used, results and its discussion of findings, and conclusion and implication of the review done.</p> <p><b>Additions:</b>  <b>CAPS:</b> Based on the guidelines of IJECC: modify the section "abstract" to "ABSTRACT"  <b>Objective Statement in abstract:</b> The abstract lacks a clear statement of the study's primary objective. Adding a specific sentence that states the aim of identifying and mapping groundwater potential zones will help guide the reader.  <b>Conclusion in the abstract:</b> Adding conclusion in briefly  <b>Deletions or Modifications:</b>  <b>Introduction Section in the abstract:</b> Based on the guidelines of IJECC, the <b>introduction</b> is not necessary  <b>Methodology in the abstract:</b> The sentence "Several influencing factors in which groundwater potential of a region entirely and partially depends..." is slightly redundant. It can be rephrased for clarity, perhaps by simply stating that the factors were analyzed individually and integrated.  <b>Text type:</b> Instead of using a table format, write the abstract in plain text.</p> <p><b>Suggested/Revised Abstract:</b></p> <p><b>ABSTRACT</b></p> <p>This study aims to spatially identify groundwater potential zones using integrated Remote Sensing (RS) and Geographic Information System (GIS), with Analytical Hierarchy Process (AHP) techniques. The study was conducted in the Konkan region, Maharashtra, India, between xxxx month xxxx year and xxxx month xxxx year. Several factors influencing the identification of groundwater potential zones were assessed and weighted using the analytical hierarchy process. These factors include geology, geomorphology, rainfall, soil, slope, groundwater depth, land use/land cover, and lineament density. A weighted sum model was applied in a GIS environment to integrate these factors, resulting in the classification of the region into five groundwater potential zones: Very Good, Good, Moderate, Poor, and Very Poor. Results show that 44.19% of the region falls in moderate potential zones, 27.23% in poor zones, and 19.82% in good zones, while very good and very poor zones cover 4.33% and 4.43%, respectively. Therefore, the high area coverage of groundwater potential zones, ranging from moderate to very good, provides critical insights for sustainable groundwater management and planning in the Konkan region.</p> <p><b>Keywords:</b> Konkan, Groundwater Potential, Water Resources, RS and GIS, AHP.</p>	
<p><b>Are subsections and structure of the manuscript appropriate?</b></p>	<p><b>The subsections and structure of the manuscript are not appropriate.</b></p> <p><b>1. The subsection in the materials and methods part said that:</b></p> <ul style="list-style-type: none"> <li>3. Database and methodology</li> <li>3.1 Geospatial database</li> <li>3.1 Methodology for assessment of the groundwater potential zones</li> </ul> <p>Both subsections have similar headings. <b>So, based on the guidelines and to make it clear for the reader, revise it appropriately in place of the subsection</b></p> <p><b>2. The manuscript structure is</b> slightly out of the guidelines of IJECC. So, I suggested to the authors about</p>	

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	<p>structure:</p> <ol style="list-style-type: none"> <li>1. <b>INTRODUCTION</b></li> <li>2. <b>MATERIALS AND METHODS</b> <ol style="list-style-type: none"> <li>2.1 <b>Study area</b></li> <li>2.2 <b>Materials / Geospatial Database</b></li> <li>2.3 <b>Methods</b> <ol style="list-style-type: none"> <li>2.3.1 Thematic Layers and Geospatial Techniques</li> <li>2.3.2 Analytical Hierarchy Process (AHP) and Weighed</li> <li>2.3.3 .....</li> </ol> </li> </ol> </li> <li>3. <b>RESULTS AND DISCUSSION</b> <ol style="list-style-type: none"> <li>3.1 <b>Geology</b></li> <li>3.2 <b>Geomorphology</b></li> <li>3.3</li> <li>3.4</li> <li>.....</li> </ol> </li> <li>4. <b>CONCLUSION</b> <p>.....</p> <p style="color: blue;">So, revise the structure of the manuscript.</p> </li> <li>5. <b>Indentation is not required</b></li> <li>6. <b>Spacing:</b> Subheading to paragraph, paragraph to paragraph spacing should be uniform (6 pt)</li> <li>7. <b>The first level heading:</b> (for example: 2. Heading ) should be <b>(ARIAL, BOLD, 11 FONT, LEFT ALIGNED, CAPS)</b></li> <li>8. <b>The second level heading:</b> (for example: 2.1 Subheading) should be <b>(ARIAL, BOLD, 11 FONT, LEFT ALIGNED)</b></li> <li>9. <b>The third level heading:</b> (for example: 2.1.1 Sub-subheading) should be <b>(ARIAL, BOLD, 10 FONT, LEFT ALIGNED, underlined)</b></li> <li>10. <b>Tables and Figures:</b> I suggested that the discussion about the tables and figures should appear in the text before the appearance of the respective tables and figures. For example, the discussion of Table 2 and Figure 10 are after the table, and all Tables require table format (Use Normal and Table Classic 1 format and use the guidelines of IJECC.). Revised all figures to make them visible by re-editing the legend, the map's color, coordination, district names, and the AutoFit window.</li> </ol>	
<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>	<p>This manuscript is scientifically robust and technically sound because it integrates multiple proven techniques such as Remote Sensing (RS), Geographic Information System (GIS), Inverse Distance Weightage (IDW) and the Analytical Hierarchy Process (AHP). The inclusion of several groundwater-influencing factors, like geology, geomorphology, rainfall, soil, slope, groundwater depth, land use land cover, and lineament density add to the scientific thoroughness, ensuring comprehensive data analysis. The weighting system using AHP and the consistency check through the Consistency Ratio (CR) strengthen the reliability of the model. Moreover, the validation of results through the classification of groundwater potential zones demonstrates the practical applicability of the findings for groundwater resource management.</p>	
<p><b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b></p>	<ol style="list-style-type: none"> <li>1. <b>37% of the total references are above 7 years old.</b> So, add newer studies from the last 3-5 years about <b>groundwater, Geospatial Techniques, and groundwater-influencing factors, for discussion.</b> <b>Suggestions:</b> <ol style="list-style-type: none"> <li>1) <a href="https://doi.org/10.1016/j.ecolind.2021.107685">https://doi.org/10.1016/j.ecolind.2021.107685</a></li> <li>2) <a href="https://doi.org/10.1007/s13201-022-01802-4">https://doi.org/10.1007/s13201-022-01802-4</a></li> <li>3) <a href="https://doi.org/10.3390/land12101877">https://doi.org/10.3390/land12101877</a></li> <li>4) <a href="https://doi.org/10.1016/j.pce.2024.103738">https://doi.org/10.1016/j.pce.2024.103738</a></li> <li>5) doi: <a href="https://doi.org/10.26599/JGSE.2023.9280021">10.26599/JGSE.2023.9280021</a></li> </ol> </li> <li>2. <b>In addition to using new references follow the guidelines of the journal for citation and referencing style (for example:</b> citations should be indicated by the reference number in brackets [3]; <b>Reference to a journal:</b> 1. Hilly M, Adams ML, Nelson SC. A study of digit fusion in the mouse embryo. Clin Exp Allergy. 2002;32(4):489-98.)</li> <li>3. Some parts of the manuscript need citations/References that are stated by others and any numbers without your findings (for example Lines 7-8, 12-13,16-17.....etc)</li> </ol>	

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<p>Minor REVISION comments  <b>Is the language/English quality of the article suitable for scholarly communications?</b></p>	<p>The language of the article is generally understandable, but it could benefit from some minor revisions to improve clarity and flow. There are occasional grammatical issues, such as inconsistent verb tenses and slightly awkward phrasing, which could be refined for better readability and scholarly communication.</p>	
<p><b>Optional/General</b> comments</p>	<p><b>1. Methods:</b> Describe in detail a crucial role/impact on the movement and occurrence of groundwater with citation/reference; Inverse Distance Weightage (IDW) tool; a normalized pairwise comparison matrix was developed by calculating individual weights and criteria weights (CW) for each thematic factor including the reference  <b>2. Results:</b> The results descriptions mixed with some methods descriptions for example Lines 156-158, 188-190... etc) . Note that this section is results and only present results or findings  <b>3. Discussion:</b> There is no good discussion available for the results presented. Discussion of results is extremely shallow and must be presented in detail in a separate section after the results.  <b>4. Conclusion:</b> The conclusion of the study should provide a clearer summary of the key findings and their implications for groundwater management. Additionally, it would be useful to suggest potential avenues for future research.</p>	

**PART 2:**

	<p><b>Reviewer's comment</b></p>	<p><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>
<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>	

**Reviewer Details:**

<p>Name:</p>	<p><b>Edmealem Temesgen Ebstu</b></p>
<p>Department, University &amp; Country</p>	<p><b>Arba Minch University, Ethiopia</b></p>