

### Review Form 3

Journal Name:	<a href="#">Journal of Scientific Research and Reports</a>
Manuscript Number:	Ms_JSRR_127707
Title of the Manuscript:	<b>Decadal Change in Land Use and Land Cover Dynamics: A Comprehensive Assessment of the Kharun Catchment</b>
Type of the Article	Research

#### PART 1: 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>
<b>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.</b>	This manuscript provides a comprehensive assessment of decadal LULC dynamics in the Kharun catchment, offering critical insights into the environmental impacts of urbanization and deforestation in a rapidly developing region. By analysing 30 years of spatial data, it highlights significant trends in land transformation and their implications for resource management and ecological balance. The findings contribute valuable knowledge to the scientific community, informing sustainable land management practices and policy development. Furthermore, it underscores the importance of long-term LULC monitoring for addressing environmental challenges and promoting socio-economic resilience in similar catchments worldwide.	
<b>Is the title of the article suitable? (If not please suggest an alternative title)</b>	Yes	
<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>	Land use and land cover changes profoundly influence environmental and resource dynamics, particularly in developing regions. This study examines 30 years of LULC changes (1992–2022) in the 4,143.17 km <sup>2</sup> Kharun catchment in Chhattisgarh, India, a key area for agriculture and urban activities. Using Landsat imagery and GIS tools, six LULC types - water bodies, forests, urban areas, upland paddy fields, lowland paddy fields, and barren land - were classified. Results show urban areas expanded from 1.92% in 1992 to 9.35% in 2022, driven by deforestation (forest cover dropped from 4.86% to 2.77%) and reduced barren land (28.64% to 24.15%). Water bodies also grew from 2.00% to 2.63% <b>(Please explain why)</b> . These trends underscore the need for sustainable land management strategies to balance development with conservation, mitigate deforestation, combat land degradation, and manage soil and water resources.	
<b>Is the manuscript scientifically, correct? Please write here.</b>	Yes	
<b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b>	The provided references are a mix of journal articles, theses, reports, and conference proceedings, covering topics such as LULC dynamics, remote sensing, GIS applications, and watershed management. Many references are over 10 years old (e.g., Zubair, 2006; Chaudhary et al., 2008; K.N. & Narendra, 2006). Recent advancements in LULC methodologies, particularly with newer satellite imagery, are not well-represented. The majority of the references are from regional or less-impactful journals, which may not fully capture the latest global trends or methodologies in LULC research. <u>Suggestions:</u> 1. Include more recent publications (post-2018) to reflect the latest techniques, datasets, and analyses in LULC studies. 2. Diversify sources to include articles from high-impact journals such as Remote Sensing of Environment, International Journal of Applied Earth Observation and Geoinformation, Land, and Environmental Management. 3. Incorporate references utilizing advanced machine learning and deep learning approaches for LULC classification, which are now state-of-the-art.	

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<p><b>Is the language/English quality of the article suitable for scholarly communications?</b></p>	<p>Yes</p>	
<p><b>Optional/General</b> comments</p>	<p>The article successfully identifies critical LULC changes in the Kharun catchment over three decades, presenting an important baseline for land management. However, the limited exploration of causal factors and environmental consequences somewhat weakens its practical applicability. Addressing these gaps would enhance the study's relevance to policy-making and its utility as a model for other regional LULC analyses.</p> <p>The study uses the maximum likelihood classification (MLC) method for LULC mapping, which is outdated compared to modern machine learning approaches like Random Forest or Support Vector Machines. The choice of MLC is not justified in the methodology section, raising concerns about classification accuracy, especially for complex landscapes like the Kharun catchment.</p>	

**PART 2:**

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

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