Review Form 3

Journal Name:	**International Journal of Environment and Climate Change**
Manuscript Number:	**Ms_IJECC_125398**
Title of the Manuscript:	**"Runoff Dynamics and Soil Erosion Assessment: A SWAT Model Approach for the Upper Cauvery River Basin"**
Type of the Article	**Original Research 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.	Climatic and physiographic determinants such as topography, land use, soil properties, and anthropogenic interventions substantially influence a catchment's hydrological equilibrium. The increasing availability of geospatial datasets on watershed characteristics and hydro-meteorological variables emphasizes the importance of integrated hydrological models for effective catchment management. The SWAT model is recognized for its robustness, and this research aims to leverage its capabilities to validate its effectiveness in estimating runoff and erosion, providing crucial insights for advancing sustainable catchment resource management.	
Is the title of the article suitable? (If not please suggest an alternative title)	Yes, title of the article is suitable	
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.	Abstract of the article is comprehensive. Addition or deletion of some points are not required.	
Are subsections and structure of the manuscript appropriate?	Yes, subsections and structure of the manuscript are appropriate	
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.	Hydrological modeling is crucial for water resource planning, design, and decision-making. SWAT, a its robust, comprehensive, and systematic rainfall-runoff model, addresses the challenge of managing natural resources amid environmental changes. This study employed the SWAT model to elucidate the rainfall-runoff dynamics within the Upper Cauvery River Basin, Karnataka, India (36,682 km²), employing the SCS Curve Number (CN) method for runoff estimation. The authors reported that 15-18% runoff and a total soil loss of 2027.95 t/ha/yr. Runoff from agricultural and fallow lands contributed significantly, requiring management interventions. Sedimentation in the lower catchment and reduced reservoir capacity further highlight the need for integrated soil and water management. The SWAT model showed a strong correlation between simulated and observed data, with satisfactory runoff and soil loss estimate results.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.	The references used in this manuscript are sufficient and recent.	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	Yes, the English quality of the article suitable for scholarly communications	
Optional/General comments	➢ The authors conducted very good study and written this manuscript and illustrated the results in scientific way. Very few clarifications are missing and small corrections needs to be done. **1.** Under 3.1 and in conclusion part, it is mentioned that Arcview interface SWAT was used. But in 3.2 *i.e.,* methodology and in fig. no. 3., QGIS and QSWAT plugin is mentioned. Please check and correct accordingly. **2.** In Table 06 *i.e.,* Soil erosion quantification using the RUSLE Model, T should be small. Units will be **t/ha/yr.** **3.** In conclusion, 33.48-55.89 Mm/ha/yr, M should be small letter. Units will be **mm/ha/yr.** ➢ I recommend this manuscript for its acceptance and publishing in the journal after incorporating the suggestions above and the corrections made in the manuscript.	

Comment [HP1]: M should be small letter. mm/ha/yr.

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)*	

Reviewer Details:

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