Review of: "Exploring the Impact of Future Land Uses on Flood Risks and Ecosystem Services, With Limited Data: Coupling a Cellular Automata Markov (CAM) Model, With Hydraulic and Spatial Valuation Models"

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The research assessed the influence of land use changes on flood risks by employing a Cellular Automata Markov (CAM) model integrated with Geographic Information Systems (GIS). In addition, the land use map results are utilized in an HEC-RAS hydraulic model to assess various flooding impacts during a design storm, employing the rain-on-grid method. The authors explicitly emphasized the innovative aspect of their study by integrating land cover forecasting with hydrologic-hydraulic modeling and spatial ecosystem services valuation (ESV). This study holds significant value as it allows for the evaluation of future land use changes and their effect on flooding risks, and potential economic losses in flood-prone areas. I suggest the acceptance of the manuscript upon applying several minor revisions to the current version and making several points clarified to me.

The comments are as follows:

1. As it is mentioned in the manuscript, the land use/land cover prediction was done using the CAM model depending only on the land use/land cover maps over the years t and t+1 (in which case the time step is 5 years) by calculating the transition probability matrix. Besides, the authors mentioned that the land use/land cover prediction is done with the **minimum necessary inputs (land use/land cover maps)**. While it's true that this study relies on minimal inputs (!), it's essential to recognize that predicting land use/land cover wouldn't be feasible without sequential land use/land cover maps, which may be unavailable for most of the study areas. In cases where these inputs are lacking (in study areas without access to sequential land use/land cover maps), what do the authors suggest as alternative approaches for predicting land cover/land use?

2. Following the previous comment, suppose our purpose were land cover/land use prediction using a simple CA model instead of CAM for the case studies in which land use/land cover maps are lacking. How would the process of land cover/land use prediction change? What would be the transition rules between cells/patches? As we know, CA modeling, as a complex system modeling, is not just about using three matrices of which two are multiplied and the third one is obtained; to be more specific, the CA modeling approach is about delineating the transition rules between the cells/patches, what attributes/properties patches include, how the process of land cover/land use changing is happening over time, and what surprising processes emerge through the interaction between the cells/patches that were unpredictable before we did the simulation.

3. What benefits does the CAM model offer compared to other methods, particularly the CA model, that prompted the authors to choose it?

4. It is not mentioned which years are used for training/calculating the transition probability matrices and which year/years are used for the validation of the model. In other words, based on the comparison of which year/years land use/land cover maps are these results obtained? **"Accuracy: 99.63%; MAE: 0.0094; RMSE: 0.1613; Kappa: 99.25%"**

5. Following the second paragraph of the "Conclusion" section: "**It uses factors such as the current land use category of a pixel, its neighboring pixels, and the transition probabilities (according to the estimated matrices). For more refined changes, factors like proximity to existing urban centers, can be included in the code. In this case, we kept the example simple, given the purpose to show how a limited-data approach would work, as proximity to existing urban centers would require additional data (e.g., shape files or point data of urban centers), and extra analysis (e.g., raster-distance tools, using the proximity as an additional layer, and incorporate it in the CAM)**."; it is not clear whether the authors have used the proximity to urban centers in their model. This paragraph needs paraphrasing.

6. What are the primary constraints of the current investigation, and what recommendations do the authors propose to address these limitations in future research? Specifically, regarding the scarcity of land use/land cover maps, what suggestions do the authors provide for future studies?

7. Please modify the maps in Figure 2 to align with the format/appearance of other figures/maps. Please replace the images in Figure 2 with the maps exported, not the screenshots of maps without the legend. The current images in Figure 2 are not appropriate for publication.