

# ***Interactive comment on* “Comparison of statistical and analytical hierarchy process methods on flood susceptibility mapping: in a case study of Tana sub-basin in northwestern Ethiopia” by Azemeraw Wubalem et al.**

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Dear Reviewer, we appreciate your constructive comments and suggestions which helped us a lot in improving the quality of our manuscript. We do hope that your comments, suggestions, and concerns were addressed in our revised manuscript. Having said this, we will proceed to the responses to questions and comments. 1. The way of presentation in the manuscript is followed the scientific way of manuscript writing even though you could not agree. For example, this work is developed based on both secondary and primary input data. To use quality flood points as input for analysis, the

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detailed flood points were collected using extensive fieldworks and Google Earth Imagery analysis. The manuscript consists of background, problem statement, objective, methods, results, discussion, and conclusions. 2. The comment that “this paper lacks scientific merit” is not convincing to us. Although the spatial relationship of the flood driving factors and flood points was performed using the existing information value, frequency ratio, analytical hierarchy process, and logistic regression methods, but still there is some contribution as the analysis and understanding will be different from one researcher to the other and with the existing area differences in different researchers who applied the same methods. This work has a great contribution to 1) add flood points in the regional and national geodatabases 2) will be used as a guideline for land-use planners, decision and policy makers 3) it may be used for regional flood mitigation purposes. Although flood susceptibility mapping is performed using both statistical and analytical hierarchy process methods in the globe, there are relevant differences in input parameters including flood factors and flood points, in the environmental condition of a region. Besides, there are no works were performed to compare the results of FR, LR, IV, and AHP in a single paper rather than they were applied individually. 3. As per your comments, several strong statements are included in the manuscript without any proper demonstration or reference, for example, "even though the flood is one of the natural parts of the hydrological cycle, it is increased in both frequency and magnitude from year to year" is acceptable it was type error we have corrected it for final revision. 3. As per your comments, we have substantially improved the manuscript of its grammatical, typological, and structural problems.

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