

## ***Interactive comment on “Assessment and Monitoring of Land Degradation Using Geospatial Technology in Bathinda District, Punjab, India” by Naseer Ahmad and Puneeta Pandey***

**Anonymous Referee #3**

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Dear Editor of SE

I'm sending my comments to the Editor regarding the manuscript se-2016-172 “Assessment and Monitoring of Land Degradation Using Geospatial Technology in Bathinda District, Punjab, India” by Naseer Ahmad and Puneeta Pandey

First of all I would like to congratulate the author for the initiative of mapping the evolution of the Bathinda District land use all over the last 14 years. In respect to the review, I would like to highlight the following aspects:

1. Does the paper address relevant scientific questions within the scope of SE? Yes, but not as presented.

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2. Does the paper present novel concepts approaches, ideas, tools, or data? The novelty is not clear in the text. 3. Are substantial conclusions reached? See below. 4. Are the scientific methods and assumptions valid and clearly outlined? Yes. 5. Are the results sufficient to support the interpretations and conclusions? See below. 6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by other scientists (traceability of results)? See below. 7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution? See below. 8. Does the title clearly reflect the contents of the paper? The manuscript shows the modifications in the land use and land cover within a 14 years interval but doesn't present enough the land degradation attributes and statements. 9. Does the abstract provide a concise and complete summary? See below. 10. Is the overall presentation well structured and clear? See below. 11. Is the language fluent and precise? Yes it is. 12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? 13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? 14. Are the number and quality of references appropriate? The authors should improve the quality of references including basic-scientific papers.

General comments:

- Although the effort of the authors was great in using geospatial technology for mapping the natural resources over the years, while evaluating the paper it was not clear the monitoring of land degradation indicated in the title and along the text. The main comments points are listed below: - The study just shows the land cover and land use evolution within 14 years but doesn't connect that information with land degradation. Is there any correlation between land degradation and land cover? Also we can't see correlation between the soil properties and land degradation. The scientific question can be: how was land degradation studied yearly and how may this new approach improve it? - As said in the abstract, the aim of the study was to assess land degradation with the help of geospatial technology Remote Sensing (RS) and Geographical

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Information System (GIS) in Bathinda District, Punjab. All over the paper we can't see the extension and the reasons of land degradation for the evaluated period. What is the novelty of the present study? - The conclusion that the soils in the study area were exposed to the salt intrusion is based on the 21 samples; hence, the authors should better explain the sampling methodology because the samples are not well distributed all over the mapped region. - Another weak point in the MS is about the severity of land degradation: how can you measure the severity parameters? - The bibliographic review must be improved by mentioning studies that used the same techniques – RS, GIS and physico-chemical analysis of soil – to evaluate land degradation and the reasons why those techniques were chosen.

Finally, I cannot recommend this manuscript for publication in its present form. A major revision is needed to improve the manuscript.

Best regards,

Reviewer

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