

Rangeland degradation assessment: a new strategy based on indigenous ecological knowledge of pastoralists

Dear Referee,

Thank you for your valuable comments and suggestions on the language, structure and scientific aspects of our manuscript. We have modified the manuscript accordingly, and detailed corrections are listed below point by point:

Introduction

- Page 3000, lines 21-22: “Rangelands are the vastest terrestrial ecosystems on the earth, covering close to 40% of the world landscape, of which more than 80% located in arid and semiarid zones”. A citation is required.
 - ✓ The citation is added.
- Page 3000, line 26: “Rangeland soils offer services to the human societies and makes the Earth system stable”. Please replace “makes” by “make”.
 - ✓ Replacement is done.
- Page 3001, lines 5-6: “Each of these factors has led to the reduction in the quantity or nutritional quality of the vegetation available for grazing that called rangeland degradation”. A citation is required.
 - ✓ The citation is added.
- Page 3001, line 6: “And this resulted also in higher soil and water losses”. Are you referring to soil losses by water erosion? Please revise it.
 - ✓ The sentence is revised.

- Page 3001, 2nd paragraph: This paragraph is too long. Please divide it in other two paragraphs. That makes easier reading the article.
 - ✓ It is now divided to two paragraph.
- Page 3003, line 3: “as fallow”. Please replace “fallow” by “follow”.
 - ✓ Replacement is done.

Material and methods

Study area

- Page 3003, line 13: 87242 ha. It is much better to write “872.4 km²”.
 - ✓ The numbers are changed.
- Page 3003, line 21: “there is a village known Robot-e Qarebil”. What does provide this information? In my opinion, that is superfluous.
 - ✓ The sentence is now deleted.

Field assessment

- Page 3006, line 2: “28 x 8 m² quadrats”. I think that it more proper to write “28 quadrats of 8 m² in size”
 - ✓ The correction is done.
- Page 3006, line 3: “22 x 8 m² quadrats”. The same comment. Furthermore, 15 quadrats inside and 18 quadrats outside total 33 quadrats, and not 22.
 - ✓ The correction is done.
- Questionnaire should be explained with much more detail.
 - ✓ Some details added.

Results and discussion

- These chapters should be rethought and rewritten.
 - ✓ The chapters are revised.

Conclusions

- “Traditional knowledge of local pastoralists was important in the management of rangeland resources” I totally disagree. Many conclusions can be drawn before to read the article.
 - ✓ The sentence is revised.

Table 1

- In my opinion, “Decrease of ground cover” and “Increase in bare soil” are redundant indicators. Furthermore, are they vegetation or soil indicators?
 - ✓ “Increase in bare soil” is deleted from the list of indicators. This indicator is related to the soil conservation, so we consider it as soil indicators.
- There are 4 indicators that have been proposed by the scientists. Why?
 - ✓ These indicators are indeed proposed by pastoralists and they use them for assessing the changes in their land condition that are usable by the pastoralists themselves and which could be integrated into a Land Degradation Assessment Plan.

Table 3

- What does it mean CV?
 - ✓ Coefficient of variance. It is deleted now.
- Why are only presented 13 indicators?
 - ✓ They were significant indicators in the previous table. Now all indicators are considered.

Figure 1

- From an aesthetical point of view, this figure is not very interesting.
 - ✓ Figure is revised now.