

Interactive
Comment

Interactive comment on “Determinants of farmers’ tree planting investment decision as a degraded landscape management strategy in the central highlands of Ethiopia” by B. Gessesse et al.

B. Gessesse et al.

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Reply to interactive comment on " Determinants of farmers’ tree planting investment decision as a degraded landscape management strategy in the central highlands of Ethiopia" by B. Gessesse et al.

[reply] Dear Anonymous Referee # 2, On behalf of the coauthors, I am delighted for your critically reading of our manuscript, valuable comments and suggestions you made on the interactive discussion paper titled “Determinants of farmers’ tree planting investment decision as a degraded landscape management strategy in the central highlands of Ethiopia" which was published in journal of Solid Earth Discussion sec-

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tion. We want to express our gratitude that you recommend the paper to be published in the Journal of Solid Earth with minor revision. In doing so, I sincerely hope that we have sufficiently addressed your concerns.

Sincerely, Berhan Gessesse, PhD
Details of changes made to the manuscript
We have attended the following comments suggested by the Anonymous Referee # 2.

I. Specific comments
I. The sentence in the abstract section, on p3246, line 11-17' is too long and better to split into two sentences. The last two sentences of the' abstract section are needed to be rephrased in order to strongly illustrate the overall conclusions of the study. This could be achieved by using better connective words or by minimizing the connective words.

[reply] The sentence is revised in the final version of the abstract section of the manuscript as follows.

The findings of the study demonstrated that the adoption of tree growing decision by local land-users' is a function of a wide range of biophysical, institutional, socioeconomic and household level factors. In this regard, the likelihood of household size, productive labour force availability, the disparity of schooling age, level of perception of the process of deforestation and the current land tenure system have a critical influence on tree growing investment decisions in the study watershed. Eventually, the processes of land use conversion and land degradation are serious which in turn have had adverse effects on agricultural productivity, local food security and poverty trap nexus. Hence, the study recommended that devising sustainable and integrated land management policy options and implementing them would enhance ecological restoration and livelihood sustainability in the study watershed.

II. In conclusion section, p3261 and p3262 the fourth, fifth and sixth sentences are needed to be coherently connected to convey the major conclusions of the study in a powerful manner.

[reply] The conclusion section of the manuscript is revised as follows:

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This paper examines major determinants of smallholder farmers' tree planting decision as a land management strategy in the Modjo watershed, Ethiopia. The result of the study revealed that the challenges for sustaining the current land resource management options including tree planting decisions as a land management strategy are enormous in the study watershed. As a result, meaningful results are not achieved to address degraded land rehabilitation. In this connection, local land users' low level tree planting investment achievement is highly compromised by various determinants. Among others, the likelihood of household size, productive labour force availability; the disparity of schooling age, perception of the process of deforestation and the current land tenure system have significantly affected the practice of tree growing investment decision to combat land degradation and its consequent impacts on soil fertility exhaustion and ecosystem disruption as well as to scale up ecological sustainability. The findings of this study also contribute a lot to provide relevant policy inputs for stockholders and decision makers to ameliorate determinants of tree planting investment decisions. Thus, the study recommended that integrated watershed-based land resource management strategies are essential to: (i) take corrective measures to stabilise the determinants of land management practices as well as prioritise, rehabilitate and protect ecologically vulnerable and degraded sites; (ii) raise awareness about the negative impacts of land resources degradation process and the effect of inefficient utilization of natural resources, and (iii) secure stable land-use rights and land ownership legal enforcement. In addition to this, further studies are still needed to establish institutional, economic, livelihood and ecological sustainability principles which guide the practice of continual land management implementation in the study watershed in particular and in other similar geographical setting at large.

III. [reply] All other technical corrections commented and suggested by the referee # 2 are fully addressed and incorporated both in the "authors' changes in manuscript" and in the "revised version of the manuscript".

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