

## Responses to Referee #1 (M. Hobley)

M.V. Ogra and R. Badola

*We thank the Reviewer very much for the time and insight invested into this constructive and helpful review. Our responses to individual points and plans for revisions are outlined below.*

R1: This is a very useful paper that frames the debate well and provides evidence to show the importance of understanding the highly gender differentiated effects of climate change. The authors' objectives of complementing model-based approaches with qualitative discussion of the evidence of the effects of climate change on women is an important attempt to try to build a more articulated understanding linking macrolevel change to micro-level effects. The examples drawn on by the authors clearly illustrate the highly gendered and class-based effects of climate change. The author demonstrate persuasively the importance of understanding the micro-scale factors that determine the experience of climate change for the individual. The paper raises some important questions for further research.

- Author response: *Thank you for the encouraging and positive feedback.*

R1: The paper focuses on livelihood diversification as one response to trying to reduce climate vulnerability and uses as an example ecotourism as one form of livelihood diversification, although the authors admit this may not deliver the expected benefits. It would have been good to have seen a discussion of the other pathways that local people take to reduce their levels of livelihood insecurity, as I was left wanting to know far more than just about eco-tourism. The role of migration and the positive as well as negative effects could have been usefully discussed or referenced. For example the work of researchers in Nepal on migration effects on social mobility of poor dalits shows some of the positive effects of migration. Dalits through their purchase of land from remittances are improving their levels of livelihood security leading to a degree of social change in land tenure that is unprecedented.

- Author response: *The issue of male out-migration was mentioned briefly in the original manuscript (P 1506, L10), but we agree that questions about the "bigger picture" livelihood strategies would improve the discussion. In our revised manuscript, we plan to add additional text that provides more detail about the range of livelihood strategies in the study area (including the role of migration).*

*We appreciate the reviewer's mentioning about the positive impact of migration on dalit households in Nepal (e.g., Adhikari and Hobley, 2013)<sup>1</sup> and agree that there where we have data or literature about the benefits of out-migration in the NDBR these positive dimensions can be noted in the revised text. Similarly, the work of Giri and Darnhofer<sup>2</sup> raises interesting and relevant questions about the potential for male out-migration to create new opportunities for participation in community forestry initiatives for certain groups of "left-behind" women. We are grateful for the insightful suggestions to consider these issues, as these minor changes will enable the revised paper to better contextualize the ecotourism initiatives.*

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<sup>1</sup> Adhikari, J. and Hobley, M. Everyone is leaving: who will sow our fields? The effects of migration from Khotang district to the Gulf and Malaysia, Nepal Inst. of Dev. Studies (NIDS), Kathmandu, 2011.

<sup>2</sup> Giri, K. and Darnhofer, I. Outmigrating men: A window of opportunity for women's participation in community forestry? Scandinavian Journal of Forest Research, 25: 55-61, 2010.

R1: The highly dynamic nature of livelihood change needs to be captured by climate modelers, as well as policy-makers. The authors raise important questions about the nature of climate modeling and rightly call for frameworks that include gender-differentiated vulnerabilities. I would add to this the need to model the different livelihood choices that are being made by local people and the drivers that underlie these changes as a basis from which to look at the socially differentiated outcomes of these choices and the quality of their adaptive capacity.

- Author response: *We agree completely. Thank you for this suggestion. We will add text to this effect in the revised conclusion.*

R1: Overall the paper is well written, structured and referenced. The abstract reflect the content of the paper and provide a clear and complete summary. The title does not fully reflect the content of the paper – I would suggest the authors consider changing it to: Gender and Climate Change in the Indian Hindu-Kush Himalayas: global threats, local vulnerabilities and livelihood adaptation. I suggest the last addition as quite a significant part of the paper looks at livelihood diversification as an adaptation strategy.

- Author response: *Thank you for this helpful suggestion. We will add the term “livelihood adaptation” to the revised title.*

R1: There are just a few minor typographical errors:

- line7 we seek to help readers better understand
- line 15 sentence is unclear (. . .more than. . .?)
- line 22 rural communities of the global South
- p.1503 line 31 observed in villages
- p.1506 line 17 However the involvement of women in ecotourism activities has broadened...and

- Author response: *We will be revising the paper throughout and will pay special attention to the lines flagged above, each of which will be checked and corrected.*

*Thank you again for the helpful comments. – Authors*