

Winners and losers: Exploring the differential impacts of agricultural expansion in African agriculture

N.P. Jellason^{*1}, E.J.Z. Robinson¹, A.J.M. Devenish², A. Martin³, T. Gebrehiwot⁴, D. Neina⁵, J. Mwitwa⁶

¹University of Reading, UK; ²Imperial College London, UK; ³University of Greenwich, UK; ⁴EDRI, Ethiopia; ⁵University of Ghana, Ghana; ⁶Copperbelt University, Zambia

*Correspondence: n.p.jellason@reading.ac.uk

Introduction

- Sub-Saharan Africa (SSA) will likely continue to experience food security crises as its population will more than double by the year 2050, with a tripling demand for cereals (van Ittersum et al. 2016). Currently, demand is met through imports and expansion of land for agriculture (ibid). These strategies may lead to winners and losers who exist due to the unequal distribution of impacts of such expansion. This paper draws from two fundamental theoretical perspectives on winners and losers: first, winners and losers are considered natural and inevitable; secondly, winners and losers exist as a social and political construct (O'Brien and Leichenko 2003). The emergence of winners in an ecosystem services trade-offs can result in friction between stakeholders and consequently leading to conflict (Gómez-Baggethun et al., 2013). Hence, the need for SSA policy makers to find a balance between potential winners and losers while ensuring the Sustainable Development Goal (SDG 2) of 'zero hunger' is achieved by 2030 without conflicting with SDG 15 – protecting life on land.

Materials and Methods

- Fieldwork was conducted across 16 communities in Ethiopia, Ghana and Zambia (Fig. 1).

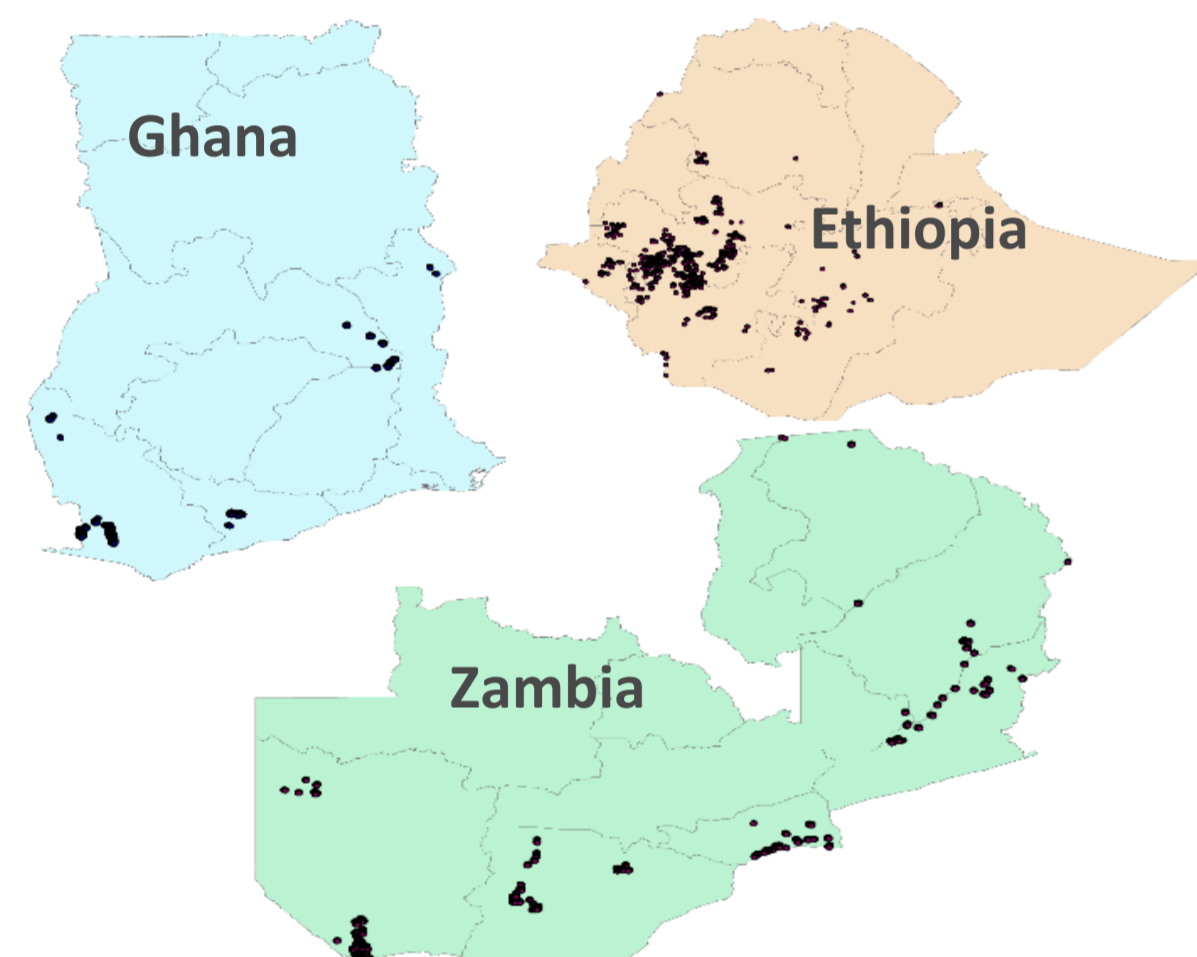


Fig. 1. Maps of Ethiopia, Ghana and Zambia showing preliminary sites selected.

- Sites were selected using geospatial data and further ground truthing based on the history of recent agricultural land expansion, to explore agricultural land-use change (Fig. 2), and the perceived impacts on rural households' food production, livelihoods, and the environment.

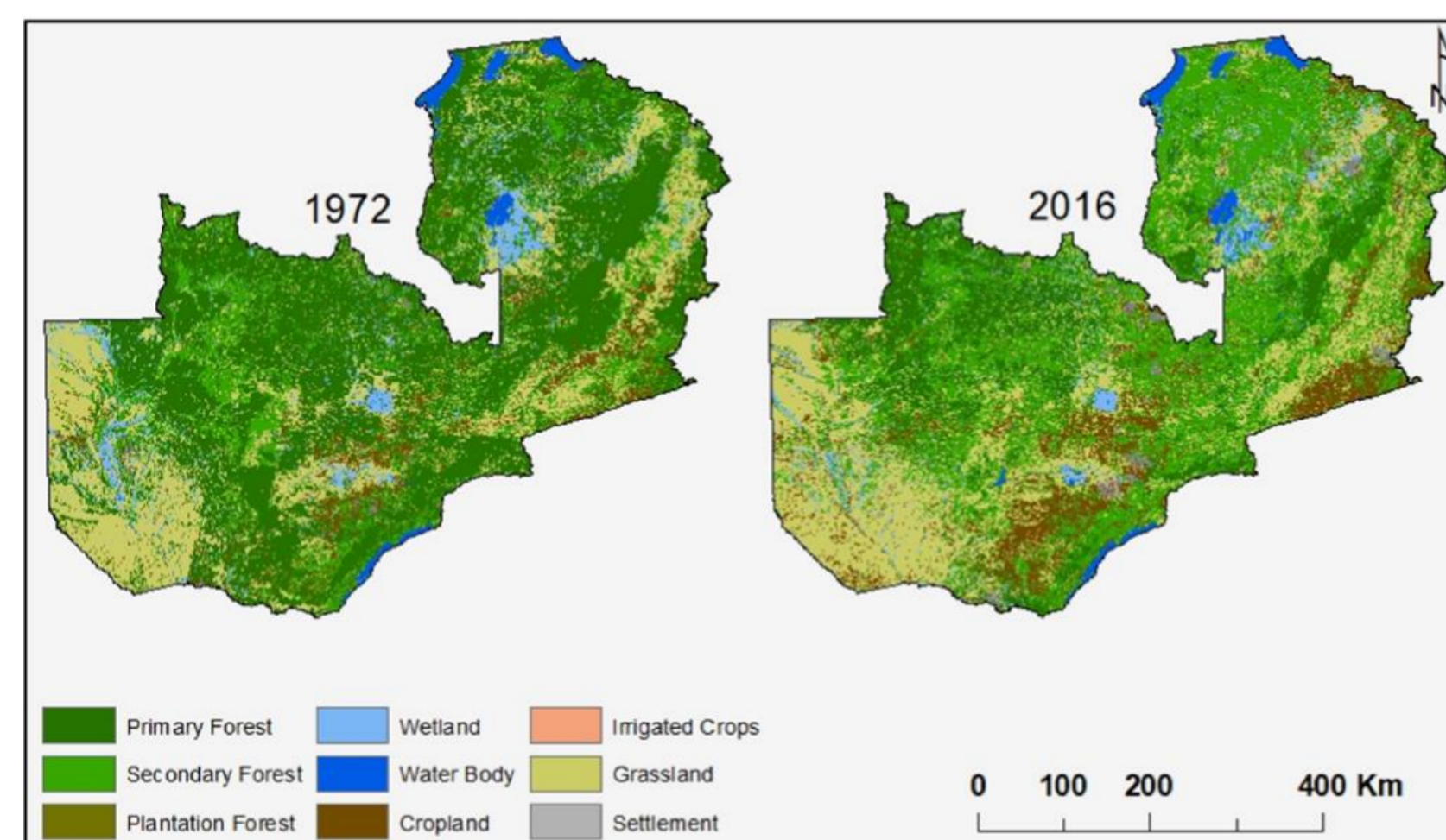


Fig. 2. Land cover change for Zambia -1972 & 2016.

Source: Phiri et al. (2019). Reproduced with permission from Elsevier.

Research Methods

- This research involved the use of participatory rapid appraisal (PRA) methods (Fig. 3) (Beebe 1995) and a rapid environmental assessment to understand perceptions of socioeconomic and environmental implications of agricultural expansion.
- Data collected were analysed using Nvivo Qualitative Data Analysis Software version 12 (QSR International 2018).

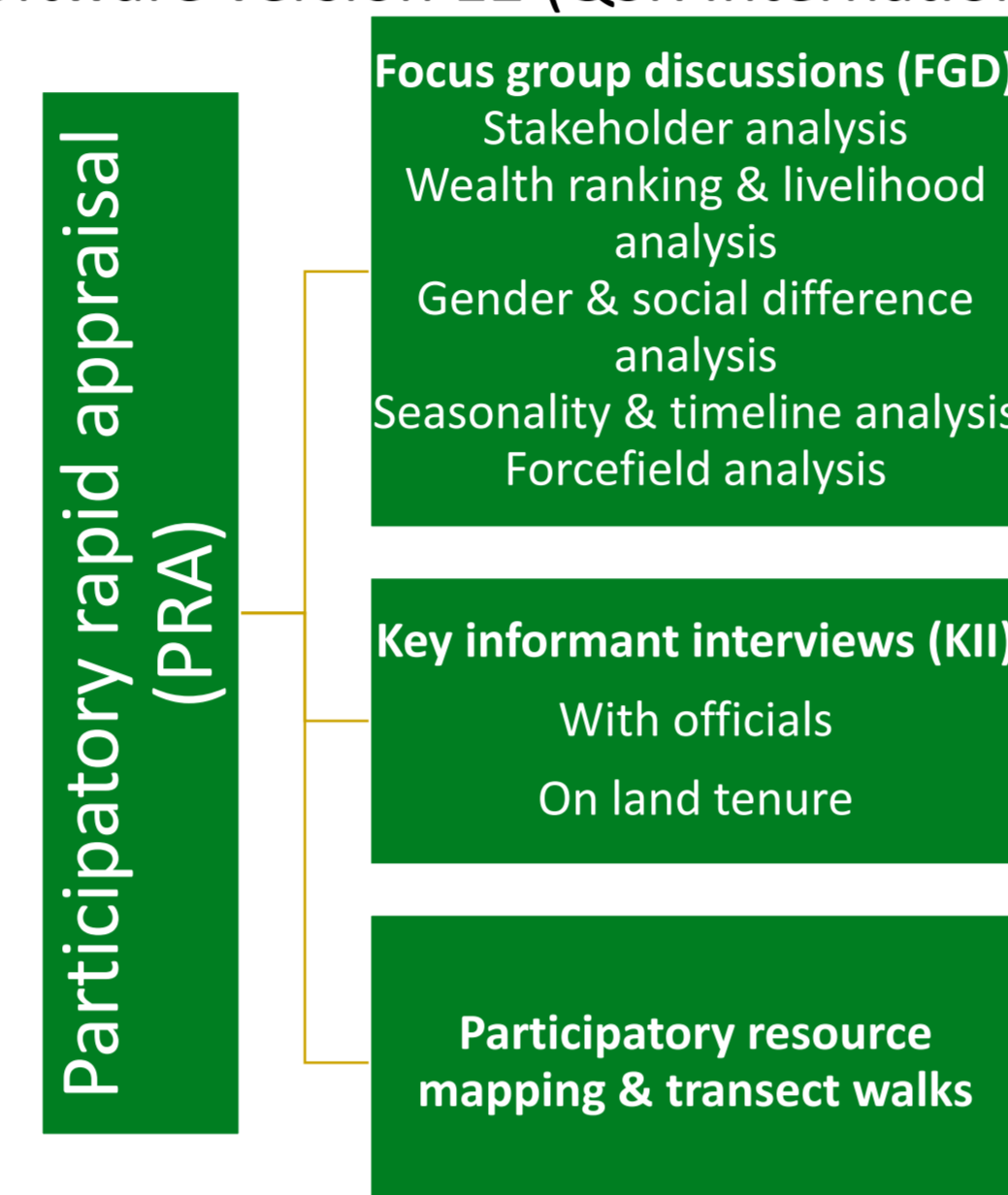


Fig. 3. PRA methods used in the fieldwork.

Source: Sentinel reconnaissance survey 2019.

Results

- Agricultural expansion is ongoing at the community levels.
- Households are differentially affected depending on:
 - their location within the agricultural landscape;
 - their dependence on the off-farm natural resource base (needs and interests) and;
 - whether they themselves have increased their farm landholding through expansion.

Impacts of expansion

- Environmental implications were assessed and socioeconomic impacts perceived by research participants to be felt differently on soils, forest and livelihoods (Fig. 4).

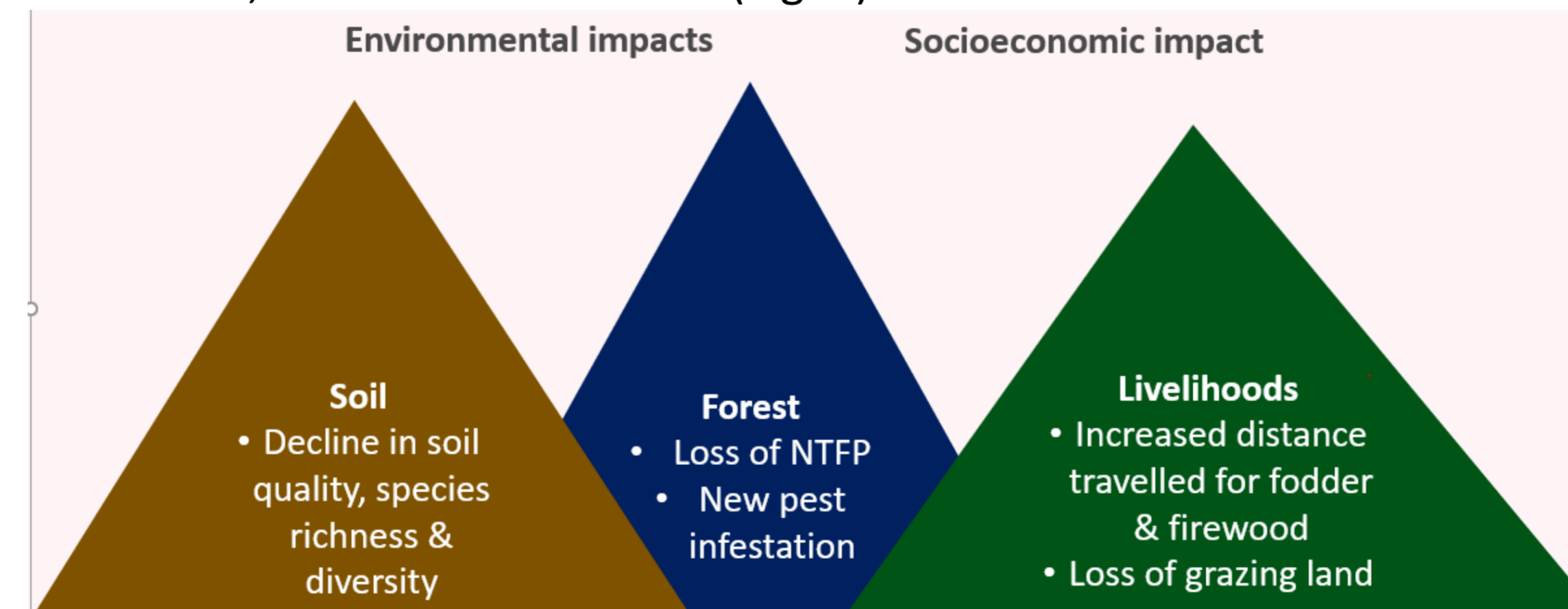


Fig. 4. Environmental implications and perceived socioeconomic impacts of agricultural expansion across the study sites in Ethiopia, Ghana and Zambia.

Source: Sentinel reconnaissance survey 2019.

Winners and losers

- Trade-offs exist in the pursuit of diverse objectives by different households in the communities in relation to the common forest resources (Fig. 5).
- Households win or lose depending on who controls rights or privileges over resources that influence land-use at both the household and community levels.

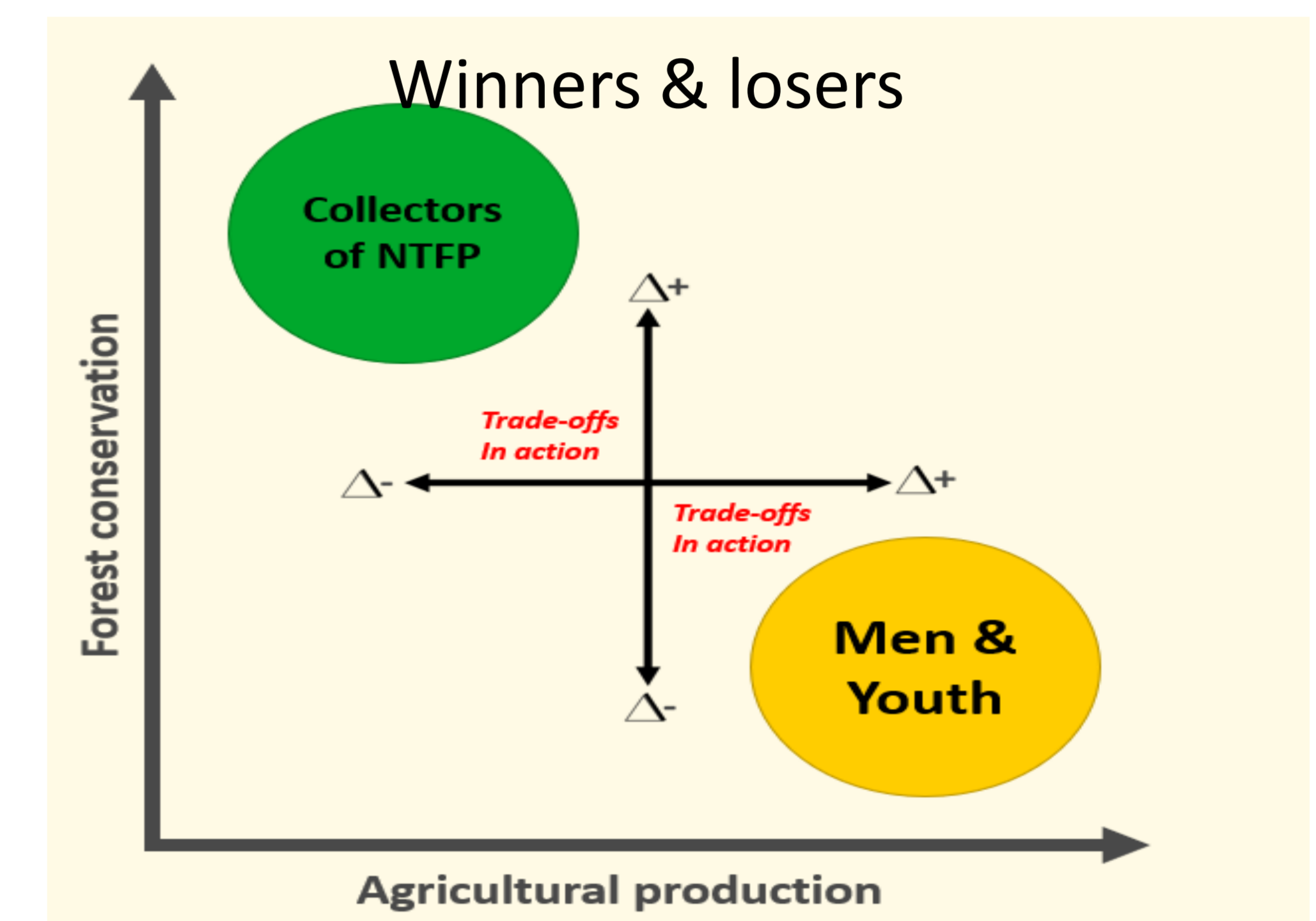


Fig. 5. Household decisions over land-use in pursuit of different objectives resulting in winners and losers.

Source: Sentinel reconnaissance survey 2019.

- Charcoal producers were found to be short-term winners.
- In terms of losses, all the community loses in the long-term as the resources become unavailable.
- Collectors of non-timber Forest Products (NTFPs) lose when forest is depleted and vice versa.

Conclusions

- Agricultural expansion affects farmers differently with impacts on the soil quality, availability of forest products and on livelihoods.
- The findings suggest available data is insufficient to allow us to disaggregate impacts of agricultural expansion by the different gender and social groups in the communities.
- Future research on differential impacts on existing social groups could generate evidence for food security and conservation policies to be better targeted.

Methodological challenge

- The rapid approach was qualitative and allowed us to explore the perceptions of impacts of agricultural expansion. Diverse qualitative research approaches used enabled us to triangulate our findings and ensure rigour in this research.

Acknowledgements

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- Further information on project: <https://www.sentinel-gcrf.org/>

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