**Author’s response to reviews**

**Title:** Socioeconomic determinants of malnutrition among mothers in the Amoron'i Mania region of Madagascar: a cross-sectional study

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We thank the 3 reviewers and the editor for the comments and suggestions to improve the manuscript.

Taking into account the recommendation of the reviewer 1, we carried out the statistical analysis of malnutrition with a binary variable (malnutrition yes / no) and we modified the title. As a result, there is a lot of change on the results and discussion. We also took into account the remarks of the other reviewers and made the recommended corrections.

Following are the explanations according the interviewers’ requests

Interviewer 2

- We calculated the sample size based on the national prevalence of malnutrition (BMI according to DHS) in order to ensure comparability of results with other study which we will carry out (post harvest / lean season and study area / other region).

- The sample size was calculated using a formula without power (population survey).

- Population study include inclusion and exclusion criteria.
- We mentioned in the introduction that the prevalence given by DHS uses the BMI.

- Dietary diversity score from the 24-hour recall is described in the section "Variables".

- 24h recall have standard version questionnaire.

- Other reviewer need precision about person who collect data.

- Material possession or goods? Can we consider animals as material possession?

- Wealth index: we created our own variables (3 different variables) with the PCA without reference.

Interviewer 3

- For the multivariate analyse, we are referring to variables selected for inclusion into the logistic regression model.

- Anthropometric measurements weren’t taken in duplicate.

- Primary education takes six years in Madagascar.

- There were no difference between illiterate and primary educational according to the malnutrition prevalence.

- About the water source, we asked if the water use for meal preparation comes from safe or unsafe source. We didn’t ask if the water was treated or not. It is an indicator in the DHS that we used.

- It is possible that the safe water supplies require much less walking. Distance between home and water source is necessary to advance this hypothesis. We will take it into account in our analysis of maternal malnutrition in this region.