

Dear Editor,

On behalf of my co-authors, we would like to thank you for giving us the opportunity to submit a revised version of our manuscript. We have now accepted the comments and made the required revision following the comments and suggestions provided by the reviewers. We would like to highlight that most of our original estimates were produced using country-specific conversion factors, and the concerns by the reviewer were partly addressed. This was probably not clear in the manuscript, and we have now indicated that our estimates were country-specific by inserting the qualifier “country-specific” wherever applicable. Below are our specific responses. We have also highlighted the changes we have made in the manuscript in track changes mode.

Sincerely yours

Sileshi G. Weldesemayat and Edmundo Barrios

### **Editors comments**

Thanks for the authors' and reviewers' efforts in improving this manuscript. We noticed the conflicting reviews from two referees, emphasizing the need to account for cross-country and temporal variations in conversion factors and residue fate. Could the authors consider the following improvements: (1) provide an estimation range by synthesizing and comparing region-specific and globally uniform conversion coefficients, discussing how limited knowledge of these coefficients may affect the database, and (2) discuss residue fate and changes based on available information from specific countries or regions? While this may not produce a more detailed global database, it could inform data users about current cross-country status and limitations in the global database, with quantitative insights.

Response: We would like to thank the Editor for offering us the opportunity. Our estimates for agro-processing byproducts of crops, poultry, meat, fisheries and forestry by-products were based on country-specific conversion coefficients. This was probably not clear in the manuscript, and we have now indicated that by inserting the qualifier “country-specific” wherever applicable. Unfortunately, we were unable to produce similar estimates for crop residues and manure, comparing region-specific and globally uniform conversion coefficients because of lack of country-specific or region-specific conversion coefficients. In lines 622-625 we have now discussed how limited knowledge of country-specific conversion coefficients may affect the database. We have also indicated this in the conclusion section (line 862-864). We were also not able to disaggregate the total residue into the different categories due to lack of data on the proportion fed to animals, burnt or left on the ground. We have now indicated this in line 627-629, and recommended an inventory of the competing uses and fate of the various residues and wastes in each country to improve data availability in the conclusion section (line 867-868).

### **Reviewer 1**

The authors have made significant improvements to the manuscript, which is now well organized and presented. One personal suggestion is to add some figures to show the spatial and temporal patterns and other interesting findings. However, as this is a data paper, I still have concerns about the dataset.

Currently, the data only presents the "total residue" of different productions using a constant conversion factor for all countries over time. In my opinion, it's overly simplistic and less valuable to the community. It may be more suitable for methodology documentation for FAO rather than a comprehensive dataset.

I suggest the following improvements for future publication: (1) enhance the methodology to differentiate between countries and time periods. (2) disaggregate the total residue into different categories, such as feed, burning, left on ground, etc.

Without these improvements, merely adding more descriptions of the limitations and promising updates in the future do not enhance current dataset's utility and may, in fact, reduce its credibility.

Response: We agree with the reviewer that our database contains some estimates (not all) produced using a constant conversion factor for all countries over time. Note that our estimates for agro-processing byproducts of crops, poultry, meat, fisheries and forestry were based on country-specific conversion coefficients. Analysis differentiating between countries was not possible for crop residues and manure due to lack of approved harvest indices or conversion factors at the country level. We were also not able to disaggregate the total residue into the different categories due to the lack of data on the proportion fed to animals, burnt or left on the ground. In the revised manuscript (line 622-625) we have indicated this as a limitations of our data. At the end of the conclusion, we have now recommended an inventory of the competing uses and fate of the various residues and wastes in each country.