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| **Reviewer 1** | | |
| **Reviewer comment** | **Capacity to answer** | **Evidence of inclusion in text** |
| 1.     Resolutions and sampling – more info is required to give readers confidence in the validity of results. E.g., distribution of plots (do they encompass a range of mangrove types? Are they representative of all mangroves?). I’m also confused about how small plot-based studies can be linked to a very coarse resolution remote sensing product. I think an honest discussion about methodological issues such as this would benefit the reader. | JBO: Describe much better the distribution of plots and the limitation in terms of the availability of data. Differences between quality of data. Clarification | Clarification in paragraph 85. |
| Table 3 – I’m confused here with the rationale for the area estimates. Why take an average of all estimates, when they are not of the same quality? You are averaging estimates from different methods and with differing levels of data quality. You are averaging methodological error, not real mangrove area, so I’m not sure this Table is really showing what you mean it to show. | JBO: Check the table. | One of the goals of our study is to estimate the uncertainty associated to different data (area and biomass) from different sources of information. In that sense, we did not looking only for studies developed under the same methodology. We wanted to show that the differences in estimation methods could led to an uncertainty in the carbon estimation. |
| 3.     You are making comparisons with global scale models, which by definition of their scale are not going to be accurate at smaller scales such as the national scale. Isn’t it to be expected that they will be different? This could be added to the Discussion. Be careful that you don’t set up a straw man argument. | JBO: Be careful with this comparison and clarify the differences of scales and of course the scope.  Ask for DHE or another colleague about the limitation of this comparison. |  |
| 4.     The Discussion discusses the policy implications of this study, but never really discusses the results derived, why these patterns are observed etc. A section early in the Discussion that talks about this would be beneficial. Perhaps could extend current Section 4.4 | JBO: Check again the discussion and try to understand what he/she is asking about. Why he/she said the results were not discussed? | 365-375 paragraphs, mention more in detail the recommendations to reduce the current uncertainties. |
| 5.     More generally, the Discussion section order seems the wrong way round. Perhaps 4.4 should be first, and the policy implications e.g., the earlier sections should be last? | JBO: Check the order of the discussion and try to figure out if it make sense the change he/she proposes. | Discussion section follows the same order that Results section. We want to present the same structure in terms to keep the same idea´s developing order. |
| 6.     The Conclusion is very methodological – should be ending on the broader implications e.g., the policy arguments you set up in this manuscript. | JBO: Includes policy arguments in the conclusions | Conclusion included in paragraph 405. |
| L18, needs a problem statement before going into the study. Why is it important to do this? | JBO: Include the reason before the statement | Included in first three lines of Abstract. |
| L67, Yee is a non-peer reviewed document. Several other refs exist which are better to use e.g., McLeod et al. 2011 Frontiers in Ecology and the Environment 9, 552-560; Donato et al. 2011 Nature Geoscience 4, 293-297. | JBO: Check the statement and choose a better reference | Yee changed by Donato et al. 2011. |
| L73, since your whole paper is about storage, I would remove mentions of sequestration. | JBO: Check the mentions and change the sense of the sentence and the word. | Change included. |
| L124, Tiers should be clearly defined since they become important later on. | JBO: Explain the meaning of each Tier. Source of information IPCC. | Tiers definitions included in paragraph 315. |
| L199, not sure how this in prep manuscript can be included here, please look at the journal guidelines | JBO: Check if the rules of the journal allow to include a in prep manuscript. I guess he/she is referring to my thesis paper. The results are key for this article, if the journal does not allow to include it, what can we do? In that case ask to Carlos Sierra. | In prep manuscript changed for another source. |
| L202, so it’s only these 4 studies? How did you find them? Was a systematic literature review undertaken? If so then you need to describe the method. I would certainly recommend a more systematic review approach, it ensure the reader that you did a robust study to capture all possible data, not just cherry-picked studies that you have personal knowledge of. | JBO: Check if they are referring to data from Colombian biomass/carbon studies, if yes, it is necessary to indicate that after a web searching, the INVEMAR was contacted to ask for information. INVEMAR is a National Research Institute and they have a platform where all information about mangroves is upload. Only information found published and INVEMAR data were included. | See clarification in paragraph 85. |
| L202, needs a Table describing each study – methods, time period, number of plots etc. Not in the detail of the supplementary information, but still enough to give the reader some info. | JBO: Question for Carlos. Is it posible to mention a supplementary information into the text?. | There is not way to present an abstract of the Table 1 of supplementary information. All mentioned in that, it is important information for the reader. |
| L211, needs more info on what aspects of the database, resolution, scale, potential errors etc. | JBO: Check the information about this line and provide more information. | Additional information about WorldClime was included in paragraph 100. |
| L241, please describe the issues these marginal pixels may cause. I wonder if there is also some uncertainty analysis that can be done around this? | Carlos Sierra and/or Víctor Gutiérrez are required. | Explanation in paragraph 360 (discussion). |
| L287, the FAO should not be used. It is aspatial (so how is it used?), inaccurate and based on literature reviews with different and inconsistent methods. | Carlos Sierra: How can we justify the use of FAO information. For me is part of the exercise to demonstrate the uncertainty linked to different official sources of information. | We wanted to include all kind of available sources, not only spatial, given our goal to estimate the uncertainty associated to different sources of information. |
| L287, Giri et al. 2010 should be Giri et al. 2011. Giri et al. 2013 is really the Giri et al. 2011 dataset. | JBO: check and change references | Change included. |

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| L291, haven’t described how these data are used. Were they used for mapping? How? How do you deal with the fact that Giri, Hutchison (which used the Spalding 2010 World Mangrove Atlas) and INVEMAR will all give different estimates of areal extent? | JBO: Describe how the global data set were used. | In paragraph 120 was clarified the different sources of area used different methodological approaches for its calculation.  The goal of our study is to estimate the uncertainty associated to those different sources of information, and of course, the different methological approaches are one of the meaning sources of uncertainty. |
| L342, its not surprising these were poor models – mangrove carbon is controlled by many things other than climate and latitude. These are global scale models, and you are applying them to much smaller scales. | This is a comment, nothing to do in the text. | N.A. |
| L437, surprising to start out with a look at mangrove area, considering this is not explicitly talked about in your aims and objectives. | JBO: check the line, and if it is necessary, include it in the objectives. | Considering one of our objectives is to estimate the current uncertainty in the estimation  70of the national carbon stock in AGB for mangrove ecosystems in Colombia, identifying sources of  uncertainty and proposing possible ways to reduce it, the estimation of mangrove area is an essential step. |
| L455, there is a much more uptodate dataset that might be worth also incorporating into this analysis: Hamilton & Casey 2016, Global Ecology and Biogeography 25, 729-738. These data are freely available online:  <http://faculty.salisbury.edu/~sehamilton/mangroves/> | There are more data now, but I don´t really have time to update the analysis. Ask to Carlos how to face this requirement. | It could be really interesting, but in, unfortunately, in this step of the research, it is almost impossible to include another set of data. |
| Table 10, Figure 4 – why are these in the Discussion section and not the Results section? | JBO: Check if this is the table he/she ask to be include with the summary information of the different sources of data. | Table 10 and Figure 4 are referenced in the Results section, but the organization of the document shows them between the text of Discussion section. |
| Figure 4 – no need to show the whole of Colombia, can zoom into the shoreline. Also needs north arrow, scale etc | Ask to Carlos for help with this topic. | The map was updated as was required for both reviewers. |
| L1239, I’m confused. So Giri is Tier 1? It was my impression that Tier 1 was very coarse global averages. It’s the scale of the data, not the scale of whoever created the data. Giri gives national level data, so is Tier 2? | JBO: Check it and edit | The reviewer consideration is correct. Change in the document was included. |
| L1295, since you have a whole section on this in the Results, I’m surprised that you don’t have a greater discussion on why these area estimates differ so much. Be clear to the reader that these are methodological differences, not real differences in area. The following paper discusses causes of mangrove area uncertainty and the implications for ecosystem services such as carbon: Friess & Webb 2014. Global Ecology and Biogeography 23, 715-725. | JBO: Includes the clarification there are not real differences in area, but real methodological differences. Use the paper the reviewer provides. | 365-375 paragraphs, mention the differences in area in terms of differences in methodological approaches, as well as some recommendations to reduce it. |
| L1303, discuss why this isn’t set up in Colombia already? Especially because many other Latin and South American countries do have such a system in place through their forestry or environment departments etc. | JBO: Check this requirement with Adriana Yepes suggestions. | 365-375 paragraphs includes some recommendations in terms to reduce the current uncertainties and considering the current scenario for its implementation in Colombia. |
| **Reviewer 2** | | |
| **Reviewer comment** | **Capacity to answer** | **Evidence of inclusion in text** |
| Abstract requires modification including the methodology sentence.  Conclusion could be complemented by recommendations for decision makers and scientists (ex. what we can expect or not for mangrove coastal planning process) | JBO: Same recommendation from Reviewer 1 about conclusion. I do not understand what he/she is asking about abstract. | Conclusion included in paragraph 405. |
| I strongly recommend to use the recent and peer review literature for citations (including the DOI).  Some recomendations below. | JBO: Check the recommendations below | All recommendations were considering in the changes |
| Lines 102-104/123-124: Use the recent literature from IPCC  (current citations, only include years 2003, 2006; most of the relevant information about blue carbon vs mangrove are improved in recent literature and scientific papers). | JBO: Check the lines and edit the references | These citations were used focused in IPCC definitions that are currently valid. |
| Lines 146-151/198-199: Miss some other studies in Colombia (such us Cispata pilot REDD+ project) that is the pionner on this issues, require to complete here as well as to review the data and analysis in case of this information was omitted. Ex. Yepes, A., Zapata, M., Bolivar, J., Monsalve, A., Espinosa, S.M., Sierra-Correa, P.C., Sierra, A. 2016. Ecuaciones alométricas de biomasa aérea para la estimación de los contenidos de carbono en manglares del Caribe Colombiano. Int J Trop Biol 64 (2): 913-926. | JBO: Check if in the context of this article and the sentence, the suggested study can be refered. | Change included |
| Lines 149-150:  Avoid reference: Carbono & Bosques 2015. The correct one is: Monsalve, A., Ramírez, G. 2015. Caracterización de la estructura y contenido de carbono de los bosques de manglar en el área de jurisdicción del consejo comunitario la plata, bahía Málaga, Valle del Cauca. INVEMAR y Carbono & Bosques. 80. | JBO: refer it in the correct way | Change included |
| Lines 405-408: If the citation is for CEU, is better to use a paper peer review than local document CNT-MIZC and CCO, 2010; such as: López Rodriguez, A, Sierra-Correa, P.C., Lozano, P. 2013. Criteria for Incorporating the Guidelines of the Integrated Coastal Zone Management (ICZM) in Territorial Land Use Planning: Study Case for the Colombian Pacific Coastal Area. International Journal of Marine Science 2013, Vol.3, No.29, 225-237. [http://ijms.sophiapublisher.com](http://ijms.sophiapublisher.com/) | JBO: refer it in the correct way | Document CNT-MIZC and CCO, 2010 was changed by López Rodriguez, A, Sierra-Correa, P.C., Lozano, P. 2013. |
| Line 405-408: If the citation is for national policy point of view prefer to use the PNAOCI (MMA, 2001, Ministerio del medio ambiente. Política nacional ambiental para el desarrollo sostenible de los espacios oceánicos y las zonas costeras e insulares de Colombia-PNAOCI). | JBO: refer it in the correct way | The suggested document does not include the classification of Coastal Environment Units that we used in our analysis. |
| Figures: Use the official map of Colombia (IGAC, 1993) or use a note that indicate the figure is only a geographycal representation and don´t represent the offical cartography matters. Dont forget San Andres Islands (if the study don´t include this area, please clarify because the line 20-21 said "and mangrove area for the whole country"; the expresion "all country" should be including the Archipelago) | This request is aligned with the Reviewer 1 recommendation about the map. Asking Carlos Sierra for help with this point. | Map was updating as was required for both reviewers. |