

Review of: "Unlocking Natural Capital in the Megadiverse Colombian Pacific Basin: Navigating Challenges and Governance Gaps"

Laura C. Quintero-Urbe¹

¹ German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig

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In the paper titled "Unlocking Natural Capital in the Megadiverse Colombian Pacific Basin: Navigating Challenges and Governance Gaps" the authors delve into the pressing issue of biodiversity conservation and the importance of valuing natural capital from diverse ecosystem services. I found this article to be particularly timely, especially in light of the recently signed Kunming Montreal Biodiversity Framework, which emphasizes the need for researchers to aid decision-making and inform management practices to halt biodiversity loss. The authors' approach to evaluating the significance of natural capital in the context of multiple ecosystem services provides a valuable tool for policymakers, practitioners, and local communities, enabling them to make informed decisions about managing their natural resources. What sets this article apart is its emphasis not only on the material and regulatory services provided by ecosystems and nature but also on the pivotal role they play in enhancing human well-being and promoting equity in megadiverse countries.

Nevertheless, I must point out that the article does pose some readability challenges due to issues with the structure of the ideas presented by the authors. These challenges are particularly noticeable in the introduction, methods description, and discussion sections. Throughout the text, various concepts and ideas are introduced, but there appears to be a lack of an overall cohesive narrative. Despite the article's commendable content and insights, the structural organization needs significant improvement to enhance its readability.

There are specific areas in the article where improvements could be made (the article did not have line numbering so I will refer to my suggestions as paragraph number:

1. **Introduction:** The introduction should provide a clear and concise overview of the research objectives, methodology, and expected outcomes. Currently, it lacks a strong hook and a well-defined problem statement. Strengthening these aspects can enhance the reader's understanding of the paper's purpose from the outset.

1st paragraph:

- "Through this approach...sustain society (Hinson et al., 2022) sentence wordy and hard to understand, my suggestion: Through this approach, we can understand that natural resources, including renewable and non-renewable, provide direct and indirect benefits to people through ecosystem services that sustain society. (Hinson et al., 2022).
- The sentence: "Natural capital is fundamental to enabling critical and irreplaceable functions (Ekins, 2003)" it not clear

what it is meant to be stated here

- the last two sentences of your text seem somewhat disconnected. Perhaps by rephrasing and connecting those ideas, your message would come across more clearly. You made a good point about the importance of evaluating benefits to people, but it seems that this approach is undervalued by governments and stated. By bridging these ideas together, you could make a more impactful statement that would better convey your message.

2nd paragraph:

- The paragraph needs better organization to enhance its clarity. The authors should start by highlighting the unique natural capital of the Colombian Pacific Basin, followed by its cultural and biodiversity significance. It's crucial to emphasize the importance of preserving the region's biodiversity, which provides livelihoods for local communities and has significant conservation value. The paragraph can then touch on the region's challenges, such as poverty and low institutional capacity, leading to alarming rates of biodiversity loss. Finally, I recommend starting a new paragraph focusing on the value of natural capital and how it can inform better actions, policies, and management plans for the region's future.

3rd paragraph:

- In this paragraph, the authors seem to have not fully developed their idea and instead jumped to a new topic. They mention the importance of taking informed actions, but then immediately move on to discussing the literature review conducted in the article.
- To improve the flow of their writing, the authors should first clearly state the problem their research aims to address. They should then describe their goals and methods, followed by their results. In my opinion, the literature review should be categorized as part of the methods section.
- Please add where the scenarios fit in the objectives and explain their importance for the research study. It is mentioned in the methods but not in the introduction.

1. Methods Description:

1st paragraph: Sentence "Its territory shares similar...Cauca and Nariño " is hard to read, please improve the coherence.

2nd paragraph: The statement regarding changes in ecosystems is unclear as it does not specify what type of changes are being referred to. It should be clarified whether it is biodiversity loss or land use change such as forest to grassland, as not all changes in ecosystems are necessarily bad. Additionally, the introduction mentions unequal incomes, poverty, low institutional capacity, absence of government, illegal mining, and drug trafficking in the region. It can be assumed that changes in ecosystems are not solely due to economic development, but rather a combination of socio-economic factors. Later in the text, the authors mention that there are other factors linked to the changes in ecosystems, which are not only related to economic development as per their definition.

Figure 2: Consider re-doing the figure for clarity. It would be beneficial to minimize the amount of white space and increase the font size to make the text more legible. Additionally, exploring alternative font options could help improve the

overall appearance and effectiveness of the figure.

Paragraph 4 description of review and standardization: If the authors conducted a systematic review, they should use an established framework such as PRISMA or ROSES to report the outcomes, making it possible for us to check how they conducted the review.

Paragraph 5: please report this information using a established framework PRISMA or ROSES

Paragraph 6: the content of the paragraph should be reported in the results section and not in the methods

Paragraph 8 on Review and standardization: Point 2; I'm unsure if "original" is fitting for this category. "Native", "Primary Forest" or "untransformed" may be better. It's also unclear if "natural remnants" refers to secondary forest.

On GLOBIO4: it is not clear if the authors used GLOBIO4 modelling approach or the GLOBIO4 outputs

1. Results:

Section 3.1

1st paragraph:

- Having a pictographic representation (map or figure) of the biomes and their spatial allocation would greatly aid the reader's understanding.
- In the sentence "Three million hectares ... in their natural state." This sentence raises a question regarding the source of information used to arrive at the number of "Three million hectares ... in their natural state." Please provide more clarity by specifying the databases or literature reviewed by the authors in order to derive this number.

Figure 4a: The letter and number size is too small to be readable. Additionally, the legend and table are difficult to read. It is not easy to interpret the information shown in the graph. This would greatly enhance the overall understanding of the information presented in the graph.

Section 3.6 :

1st paragraph: Please specify which scenario the statement refers to. Is it SSP1, SSP3, or SSP5? Also, clarify the intended meaning of "were allowed to expand", expansion in terms of the area or production?

1. **Discussion** The discussion section should focus on synthesizing the findings and linking them back to the research objectives. Currently, it appears to be somewhat disjointed. A more organized and well-structured discussion would help readers grasp the significance of the results and their implications for biodiversity conservation and natural capital assessment.

Section 4.1

1st paragraph: This is an important research outcome. However, I did not see the literature review results reported in the results section. Where was this information taken from?

2nd paragraph: The authors need to improve proficiency and proofread the paragraph as it is now hard to read.

Based on the suggestions and statements provided earlier, I have decided to end my specific comments here. While the article contains good material and suitable scientific methods, it needs better overall structure, clearer reporting of research outcomes, and stronger links between the research objectives and the discussion. In general, the discussion is too lengthy and covers too many topics, some of which could be condensed into 1-2 paragraphs instead of entire sections. I recommend that the authors focus their discussion on outcomes that support their research aims and objectives. The article's figures are difficult to read, which is unfortunate as they contain crucial information that the authors use to back up their statements. Figures are a critical element in attracting readers as they are the first thing researchers refer to in order to better comprehend the content of an article. Improving the quality of the presented figures will significantly enhance the manuscript. Finally, the authors should proofread and improve the article's readability, as it is currently difficult to read. Overall, the manuscript requires **major revisions**. While my comments focus on critical points, I want to emphasize that I appreciate this paper.