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Discussions

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**Interactive
comment**

Interactive comment on "Examining the sustainability and development challenge in agricultural-forest frontiers of the Amazon Basin through the eyes of locals" *by* Irene Blanco-Gutiérrez et al.

Anonymous Referee #3

Received and published: 2 October 2019

General Comments:

1. The paper presents two interesting case studies from Amazon countries, where the FCM approach was adopted to understand the perceptions of local actors about their environmental context. As result, different networks and scenarios were present to debate how local actor from each region could reacts to the sustainability and development challenges.

2. In the introduction section, the narrative conducts the reader to the importance of

two groups of stakeholders in Bolivian (Guarayos indigenous communities) and Brazilian Amazon (Tapajós riverine communities). An important point in this kind of modeling approach is the choice of stakeholders to represent the multiplicity of actors and perceptions for tackling the problem analyzed. Considering this, some question come up:

- Do the authors think that the riverine and indigenous communities were well represented in the groups of stakeholders that participated in the workshop?

- Do the cognitive maps represent the vision of these groups?

3. The description of the study area is long. The authors could be more focused on providing elements to support the research questions and the results (especially, the scenarios). For example, the social, cultural and political contexts experienced by stakeholders that can influence the networks structures or different responses to scenarios.

4. Regarding the description of the study area, details of temperature, precipitation and vegetation are not relevant in this section, unless they are used in the design of climate change scenarios (that would be interesting).

5. The section 2 should focus a little more on describing the workshops. Given that the stakeholder participants within each case study seem to be diverse and present even contrasting view on development and conservation, some issues need to be clarified, such as:

- How the authors selected the stakeholders groups? How conducted the process of identifying the components to be included in the model? How do the participants identify the degree of influence between components (high, medium, etc.)? What were the most important components mentioned in the workshops?

- It is unclear how component values were obtained during the workshops (were individual or group responses?). How have the authors converted the cognitive maps in the adjacent matrix? I mean, how the strength of the interactions among components (the

weighted values) was defined? How the contrasting view of the problem was converted in a single value of influence? I suggest the authors to provide the ranges of model parameters/variables presented during the workshops to show contrasting views.

6. Scenario section (2.4) is not clear. The authors could provide more details about the scenario conception and the stakeholders' contribution.

- How were climate change identified by stakeholders (changes in temperature, extreme climate events, precipitation, river level, floods, forest fires, soil erosion, etc.) and how were they translated it to the model? The climate change scenarios are the same for the two study sites?

What climate changes were considered to be impacted by deforestation?

- Conservation strategies were resumed in one strategy in the Tapajós case study (Environmental Monitoring). It is not clear if the scenario components were defined in the workshop by the stakeholders or by the authors. Anyway, I see as a problem reducing conservation strategies in a unique and passive action of monitoring. By doing this, conservation strategies may seem to have low impact to achieve desired changes, in comparison with the governance and techno-social reform.

7. The authors show in figure 2 that FCM was validated in the second workshop. How the validation procedure was carried out? Can the same participants in the first workshop validate the FCM they created themselves?

8. In the Dynamic analysis of FCM (3.2), some interesting results could be presented in respect to the model dynamics during the calculation to achieve the baseline situation. Does the system's identity remain the same after steady state analyses is conducted?

- Do the authors think that there is a relation between FCM complexity and the diversity of indigenous and riverine communities in the group of stakeholders?

Specific comments:

Page 2: Include more recent citations in introduction.

Page 5, Line 6: 'dense moist and wet forest types'. I suggest you include a classification system for the Amazon vegetation to describe the forest types.

Page 5, lines 7-9: I suggest you mention the decree n° 73.684, February 19 of 1974.

Page 5, Line 10: Cite data source (reference) in respect to the number of 'ribeirinhos' and 16 communities mostly along Tapajós river.

Page 6, Lines 20 – 25: How were focus groups defined?

Page 7: Last paragraph: I suggest to present the adjacent matrix in the supplementary material.

Page 9: How much components were included in the model by the workshop participants?

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2019-144, 2019.