

Interactive comment on “Hydrological corridors for landscape and climate restoration: Prioritization of re-greening areas in Kenya and Tanzania” by Judith E. M. Klostermann et al.

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Reply on comments of Referee 1

1. The authors assume that the land areas under consideration are “degraded,” but do not demonstrate this empirically nor define what they mean by “degraded.” The authors also assume that the land areas under study were once “green” (but do not explain what this means; perhaps “not degraded”?) and that these land areas need to be (and should be) “re-greened.” Moreover, the authors assume that the people living in these land areas desire to have their lands “re-greened” and to have it done by people from outside their country and culture. These are some hefty assumptions. I think it’s necessary for the authors to identify (make explicit) these assumptions and

defend them.

1a. The authors assume that the land areas under consideration are “degraded,” but do not demonstrate this empirically nor define what they mean by “degraded.”

We define ‘degraded’ in general terms first; the introduction mentions that: "A complex interplay of resource exploitation, population increase and environmental change is driving land degradation processes with both local and off-site impacts that may culminate in desertification, defined as the loss of productive capacity of drylands (UNCCD, 1994)". We can make this more clear by adding the word ‘define’ to this sentence. And in 3.2 the proxy is explained: "Degradation can be assessed by the soil depth loss and the carbon content of the soil relative to undisturbed conditions." The degree of degradation is shown by the annual soil depth loss in figure 2 and the restoration potential SOC levels in figure 3. Apparently not the whole area is degraded at to the same degree, and consequently greening interventions will take place at -but are not confined to- those degraded locations. Empirical work is not included in the study; for this the consent of the local people would be necessary and that is one of the next steps. This article only describes how to select locations where it can be useful at all.

1b. The authors also assume that the land areas under study were once “green” (but do not explain what this means; perhaps “not degraded”?).

Of course there is a logical link between ‘green’ and ‘not (yet) degraded’, but degradation is only one of the project concerns. The wider goal of the project is moderation of climate extremes (hot, dry, downpours) through greening of the landscape in order to create a Hydrological Corridor. Greening then means to bring the vegetation to a higher level of evapotranspiration. Therefore the term ‘vegetation degradation’ has been introduced in line 6.

1.cand that these land areas need to be (and should be) “re-greened.” Moreover, the authors assume that the people living in these land areas desire to have their lands “re-greened.”

Re-greening indeed is the intended activity that will have to take place in sufficiently large and well chosen areas. This gives the NGO an inspiring mission which not automatically is shared by all. In order to realize sustainable development over such a large scale support at all levels must be acquired; a reason to include the chapter Institutional context in the study. Re-greening only will be successful if an increase in biodiversity and land productivity can be realized with an appropriate level of stakeholder and government support. We can explain this more explicitly in the introduction.

1.e ".....and to have it done by people from outside their country and culture. These are some hefty assumptions."

It is not the intention to implement the programme in East Africa without communities from inside the country. It is the intention to come with concrete proposals for improvement of local climate in areas where regreening can have the most significant impact. The method is developed not only for East Africa but for long term actions worldwide. It is a way to put modeling and data into practice to achieve climate adaptation. Requirements for good governance are part of the institutional analysis and these apply to the local stakeholders as well as to the international partners. We can explain this more explicitly in the introduction.

1.f "I think it's necessary for the authors to identify (make explicit) these assumptions and defend them."

Where required for a better understanding the text of the study, adjustments will be made. Information on the more general nature of the project will be added in the introduction.

2. The authors write that they "used a number of objective criteria for prioritizing potential areas for re-greening interventions," but the culmination of the analysis is a set of subjective rankings used to identify "desired characteristics" by giving high scores to some criteria and low scores to "less favourable ones." The result is a subjective assessment of what the authors feel is "best" for the success of SLM practices. This is

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ok to do, but the authors need to be up front about this and identify this process as a limitation of the study.

Referee 1 is completely right. We did select objective criteria – but this selection is already subjective - and to fill the gaps towards a final recommendation we used subjective mechanisms as well, especially in the final analysis; however we tried to be as explicit as possible about all the steps we made. We will adjust this in the text.

3. The “adaptive capacity wheel assessment” is especially subjective and not culturally sensitive. Moreover, the methods and interpretation of the results (including Table 5) are unclear. While I think it’s very important to assess institutional capacity, the application of this particular kind of assessment seems rather biased and even ethnocentric. I think its inclusion in this manuscript weakens the paper.

This opinion of Referee 1 will partly be caused by the absence of the data on which this analysis is based; it may look like the scores were added to the criteria out of the blue. The table with supporting data for this analysis was left out because it added too many words to the article, but it can be added as supplementary material.

This analysis is undeniably ethnocentric and culturally biased; however, this applies to all scientific research that is published, natural science as well as social science. Then every article should start with a caveat: “We have to warn the reader that, we, the researchers, are white / coloured Europeans / Americans, who believe that models and data are relevant to understand the dynamics of planet Earth.” For the analysis we have used material that was available on the internet; it included government reports from the region. Interviews on the ground would have provided a more diverse view but collecting field data was not included in the investigation (for any of the domains).

As was explained under point 1, we see the inclusion of this part in the study exactly as the opposite: it is a way to introduce cultural sensitivity from the start by including the people and their opinions in the analysis; even if it is with insufficient data at this stage.

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4. Where do the data come from that were used to create Figures 2-6? How were these images created? This is especially important for Figures 3-6, which are assessments (not measurements). Also, the labels for each of the land areas only appear in Figure 6, and so the authors' observations throughout the manuscript are nearly impossible to follow.

No response to this as our co-author is out of the country; it will follow later.

Finally: "This is an interesting study (although the English language writing needs attention)."

Isn't it a bit ethnocentric to require of the whole world that they write English like a native English speaker? Please help and tell us what our mistakes are, because now we have to look for a needle in a haystack. Or at least indicate how many needles you found.

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