

## ***Interactive comment on “Climate and resource information as tools for dealing with farmer-pastoralist conflicts in the Sahel” by O. Mertz et al.***

**O. Mertz et al.**

om@ign.ku.dk

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Thank you very much for all the positive notes on the different paper assessment criteria. Here, we focus on responding to the critical comments and constructive suggestions:

1) The paper was not explicit about sources of conflicts in the Sahel and reduced those to socio-politically conflicts. Many studies argue that shortfall in zoning and governance is exacerbated by climate change. Another dimension is political marginalization. Usually pastoralists are not usually part in exercising their duties (no real territories) and claiming their civil right is not part of their culture. Conflicts may also arise because of the discrepancy between free riders citizens and compliant citizen

opposing the agriculturalists and the pastoralists. From typical examples in the Sahel, drought are favorable conditions for violence because of resource scarcity (e.g. doi: 10.1177/0022343311427343 )

a. We agree that extreme climate conditions can be a source of specific conflicts, but as these specific events have always occurred they are difficult to link to climate change. So yes, climate change may exacerbate conflict, but it could also do the opposite. We find that the occurrence of drought is a baseline condition in the Sahel, but we can indeed nuance the debate somewhat in the paper. We also agree that pastoralists are politically marginalized and this is indeed part and parcel of the broader national and international conflicts in the region. We were somewhat hesitant about getting too much into these larger-scale conflicts, but acknowledge that political issues also affect the small-scale conflicts, so we can add some elements to this discussion.

2) The conclusions are very useful, yet I let me in doubt how those could derived from a limited sample of practitioners, who we do not know about their origins and who they represent.

a. We will add more information about the respondents and what they represent as well as their opinions (see also comment by other reviewer)

3) The traditional relationship and exchange culture between farmers and pastoralists is not described.

a. It is correct that we did not go much into this. While we certainly acknowledge its importance, we find that more elaborate discussions would be repeating what is well known from the extensive ethnographic and anthropological literature. We can add some sentences on this related to the type of knowledge we acquired from the respondents, acknowledging that we in this case do not have the direct opinions of the farmers and pastoralists.

4) Concern with the methodology in the paper and the number of respondents:

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a. They paper is basically an exploratory exercise that emanated from the fact that this workshop was held and provided the opportunity to gauge opinions from different stakeholders involved in dissemination of information. We certainly appreciate the limitations of this approach and therefore have also used our experience from field work reported in other papers (Rasmussen et al. 2014 and 2015) as well as the wider literature. We can add some methodological reflections in the conclusion as this topic definitely requires more substantial field based research across a range of different stakeholders.

5) The fine time and spatial scale information requirement is generally a true need for communities but recent CCAFs experience in Senegal (using rural radios), or META-GRI project in Cote d'Ivoire, clearly demonstrated a general interest in aggregated climate services. The sowing dates and length of the growing season were useful for decisions to be made on-farm to adapt to likely seasonal profiles

a. We take note of this, but do not really see which changes this should generate in the paper.

6) I was unclear about the merged approach of identifying information needs for farmers and pastoralist. To me the two groups have different information needs but the analysis seems to put them in the same group when exploring data and information requirements.

a. It is not our intention to say that farmers and pastoralists have the same needs – but they can use the same types of information for their specific (and often different) needs. We hope this comes across in the paper, but we will of course double check that it does

7) The study is more like an expert knowledge assessment and will be easily dismantled by control of facts from practitioners on the ground. The authors recommended a real time system of disaggregated data at a daily basis to help farmers and pastoralist. Is there any example of such a system in the world? Is that possible given the level of

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technology we have in Africa?

a. The study is actually based on statements from practitioners who work on the ground, so we do not agree that it is not rooted in actual practices. There are many examples of real-time information services in the World and the technology is not complicated. In Africa, where the use of mobile technologies are often more advanced than elsewhere, a combination of political commitment and private investments would of course be needed to implement it. We can make these issues more clear in the paper.

8) The qualitative information might not be appropriate to generate quantitative evidence and the sample size to me is very limited. The experts might not have covered the range of opinions needed to develop the outputs. The traditional knowledge is not fully accounted in the modern assessment of information needed for informed decisions by herders

a. We are well aware that this is not a quantitative and representative sample and although we show a distribution of answers, this is not a quantitative analysis as such, but merely to provide the reader with an overview of responses. The study could, in principle, be replicated by asking the same respondents the same questions (respondents' names are on file, but they are kept anonymous for publication purposes). We will consider whether the figure and its caption can be reworked to not signal a strict quantitative approach, but rather an overview of responses, e.g. in Table form. See also our response to the previous comment.

9) Also, a distinction needs to be made between data and information. Information adds more value to data and gives examples of application rather than pure data dissemination.

a. Thanks, we will check the paper for consistency.

10) But the disregard to climate change trends is quite worrisome to me. Many previous

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studies showed the importance of climate change in the Sahel including perception analysis of such trends. The authors themselves are part of that community.

a. First of all, we do mention certain elements that might be linked to climate change, e.g. the crucial nature of August rainfall. Secondly, we have to be very cautious when discussing climate change in the Sahel compared to the inherent climate variability. There is no doubt that the droughts in the 1970s and 1980s represented a (temporary?) shift in climate patterns, but this has been difficult to link to anthropogenically driven climate change. That climate change will have an influence in the future is certain, but for now models at regional scale have great difficulties in agreeing on predictions of climate change for the region. Given the limited number of meteorological stations in the region, it is also very difficult to claim actual changing climate in the past. Hence, we agree with the referees that acknowledge the highly variable climate in the Sahel as a fundamental condition in which resource conflicts exist. In previous work that the referee alludes to, we have shown that climate factors actually have a limited effect on farming and pastoral decisions, probably because the variable climate has always existed.

11) Figure 1. We do not know is that is % or absolute values. In any case I doubt about representativeness of the information given the very small sample size?

a. The pie chart indicates absolute numbers – this will be added to the graph if we keep it. The question of representativeness has been answered above.

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