

Interactive comment on “Desertification, Resilience and Re-greening in the African Sahel — A matter of the observation period?” by Hannelore Kusserow

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This paper presents an assessment of the Sahel Desertification debate using diverse information sources: historical documents, climatic records, satellite imagery and field studies. The author suggests rightly that in assessing desertification it is necessary to relate to pre-draught conditions. The re-greening hypothesis is assessed with regard to exiting studies (published articles) using evidence gathered from the sources listed earlier. The approach is objective and seems as to aim at gaining better understanding of the changes rather than approving a certain hypothesis. The article is most detailed and informative. The literature reviewed is excessive: I think that this is the most comprehensive synthesis on the topic of the Sahel desertification debate. Most

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diverse anthropogenic and natural sources of desertification threats are discussed with reference to land use, land cover and ecological implications. The conclusions provide novel integration of known partial evidences:

- Recovery dependence on soil types is clearly a fundamental explanation. For sand soils the author suggests re-greening. In a way this conclusion leads to the question concern soil degradation as the main element and indicator of desertification.
- The decline of woody species biodiversity is presented as a primary element of desertification trend with turnover into more draught tolerant species.
- NDVI based evidence : the author own analysis suggest that if the data used is prior to 1980 there is a trend of declining NDVI rather than increasing NDVI.
- Woody species pattern changes due to fragmentation resulted increase in the distribution and size of bare surfaces.

I recommend publication, but suggest improvements regarding the figures presented: Figures representing comparison between satellite images acquired at different dates are important element of this study. However they must be based on comparable color scheme and calibration. Figure 8 is an excellent figure, but I recommend to position the information sources in a relative vertical position according to their type of indication: regreening above the main temporal axis and desertification below this axis.

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