

## ***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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Dear Maxim,

Regarding your comment “comparison of satellite imageries and processing”:

Two different data sets were used in this article. The first one comprises historical datasets of Landsat MSS and TM (Example Mali, dates: 1976, 1985 and 1991). The raw data were bought from US Geological survey in 1985 and 1991 and were processed in 1991 using ERDAS 7.4.1 and 7.5 (Kusserow, 1990, 1994, 1995). RGB = 4-2-1 (MSS) and 4-3-2 (TM).

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Processing steps:

Correction of six line effect for the MSS data.

Master scene from 1991 was relatively corrected (haze correction).

Geometric correction was conducted on the basis of the topographic map (UTM 31/WGS84) by using 17 way points (scene subset: 70 km x 50 km).

MSS scenes was geometrically corrected on the basis of the master scene (TM).

Relative calibration of the three datasets (radiometric correction) was performed by look up table modification (calibration on the basis of two test sites, showing no temporal variation).

Note: vegetation classification was done using visual interpretation techniques based on *in situ* knowledge.

The second data set includes Landsat MSS, TM, ETM+ and OLI data and was ordered for free from the United States Geological Survey through Earth Explorer (<http://earthexplorer.usgs.gov/>). These data are already pre-processed and systematically corrected. So, no further processing steps were necessary. The data sets comprise:

Landsat MSS (example Burkina Faso and Niger: year 1973; RGB = 4-2-1).

Landsat 4-5 Thematic Mapper (TM, example Niger: year 1984, 2002; RGB = 4-3-2).

Landsat (ETM+, example Niger: year 2009; RGB = 4-3-2).

OLI (example Niger: year 2013, 2014, example Burkina F.: year 2013; RGB = 5-4-3). The data were displayed with ENVI 4.7 (UTM 31/WGS84) using the default of a 2% linear stretch applied to each image band and for all data.

I still have a question regarding figure 8, which in my text presents a compilation of selected botanical assessments in the West- and the East-African Sahel since 1900. I

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suggest that you mean another figure, maybe fig. 17? If so, I do not understand your question completely, please could you give me more details?

Kind regards

Hannelore

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