

Interactive comment on “Dataset of cropland cover from 1690 to 2015 in Scandinavia” by Xueqiong Wei et al.

Anonymous Referee #1

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General comments. The authors estimated cropland area of Scandinavia for 1690–2015 using historical documents and allocated them into grids with a resolution of 30 seconds for simulation of climatic effects of land cover change. They also compared their results with prior study: HYDE3.2. Overall, this work is complete and the produced dataset is accessible via the given identifier. However, some issues should be addressed further. The area estimation of historical cropland is more important than spatial allocation. Generally, there are many problems in historical records, which cannot be directly used without evaluation and correction. But in this manuscript, the reliability evaluation of the data used to estimate cropland area was missing. The methods of historical cropland estimation based on proxy data were not introduced in detail, and the estimation and allocation results were not validated or calibrated (comparison

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with HYDE3.2 is not calibration). These problems will undermine the reliability of the dataset. Additionally, the results of this manuscript and HYDE3.2 are close (Figure 5a), so what's the advantages of this dataset? Although some differences exist in spatial pattern (Figure 6), the conclusion “the results of this study are better than HYDE3.2, and are more close to real land use history” cannot be reached by readers. Finally, the study area is small, and the proportion of cultivated land is also very small (The max value is about 7% in 1950). However, the dominated land cover type, forest, was excluded in this study, which greatly undermined the significance of this dataset.

Specific comments. Introduction. Why is it necessary to reconstruct the area and distribution of historical cropland in this area? What is the importance or necessity of reconstruction in this area? Area estimation. The reliability evaluation of the data used to estimate cropland area was missing. Spatial allocation. The allocation results were not validated or calibrated. Discussion. The results of this manuscript and HYDE3.2 are close (Figure 5a), so what's the advantages of this dataset? “Underestimation” and “overestimation” are inappropriate. In addition, it is suggested that the author should supplement the use of this dataset as widely as possible, particularly compared with previous datasets, including HYDE, so as to let readers understand the specific value of this dataset.

Technical corrections. Page 3, line 9, forestland is unavailable in SAGE dataset. Page 5, line 6, repeated “Li et al.” Page 11, line 18-20, reference(s) are needed. Figure 4 is not indispensable. Page 21, line 15 “underestimated”, and line 21 “overestimation” are inappropriate.

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