



Comment on **essd-2021-60**

Anonymous Referee #1

Referee comment on "A national extent map of cropland and grassland for Switzerland based on Sentinel-2 data" by Robert Pazúr et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-60-RC1>, 2021

I have reviewed the paper about cropland and grassland maps of Switzerland, but I still have some concerns before I can recommend publishing this paper:

1. About the data set used for classification.

(1) Sentinel-2 data of three years (2017~2019) were used for mapping cropland and grassland, so that are there landcover changes in the selected years? As far as I am concerned, we need an annual cropland map for agricultural applications, I am puzzled whether this cropland/grassland map is applicable.

(2) About the features used for classification. I have seen all features used in this study is listed in Table 1, and I found features like `ndvi_pc_05`, `ndvi_pc_25`, so are these features 5th percentile of NDVI recorded from all three-year Sentinel-2 data? Generally, we consider the time series characters for cropland/crop type mapping, for example, Low et. al (2015), Hao et. al (2018), I am not sure whether the features collected in this study have the potential to separate cropland, grassland and shrubland. Furthermore, Figure 4 showed the value range of indices of cropland, grassland, and shrubland, I suggest using some separability measurement methods, like JM distance to evaluate the separability. And I am also concerned about whether the features of high separability are applicable in the entire study region.

2. About the data validation.

(1) For parcel-level testing dataset validation, please show the location of the validation samples, and then show some validation examples to better clarify the validation samples.

(2) Please show the confusion matrix of the validation samples, which could clearly indicate the misclassification samples

(3) Please compare your cropland/grassland map with some existing land cover map, such as FROM-GLC, GLC_FCS30 by wall-to-wall comparison. This can prove that your national outperformed the global products.

Reference:

Low, F., et al. (2013). "Impact of feature selection on the accuracy and spatial uncertainty of per-field crop classification using Support Vector Machines." *ISPRS Journal of Photogrammetry and Remote Sensing* 85: 102-119.

Hao, P., et al. (2018). "Annual Cropland Mapping Using Reference Landsat Time Series—A Case Study in Central Asia." *Remote Sensing* 10(12): 2057.