

## ***Interactive comment on “Assessment and quantification of marginal lands for biomass production in Europe using soil quality indicators” by Werner Gerwin et al.***

### **Anonymous Referee #1**

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General comments: The paper presents a methodology to assess and map marginal lands for biomass production for energy purposes using Muencheberg soil quality indicators (SQR) framework and GIS procedures. The demonstration of practical applicability of bioenergy production on marginal areas is carried on six European case study sites representing different types of marginal lands, method of bioenergy production and climate regimes. Moreover, SQR method is adapted for GIS analysis by means of pre-existent European database. As such, marginal lands potentials available for biomass production and for certain bioenergy crops have been mapped and quantified across Europe. The objective of the study is of outstanding interest not only for the scientific community but also for supporting European policies to identify areas

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where incentives for expanding production of renewable resources without conflicting with agriculture production for human food and livestock feed. Moreover, the paper contains good use of English, very analytical description of the methods and results, and also discussion is exhaustive. According to my knowledge, the manuscript covers a topic that is relevant for the readership of SOIL journal and I recommend the manuscript accepted for publication with just minor changes and few integrations.

Specific comments: - Section 2.2.1, page 7, paragraph 6-17: I would suggest to shift these paragraphs to the discussion section. - Section 2.2.2, page 7, paragraph 25-30. I would suggest to describe why you choose 500m x 500m spatial resolution and the procedures adopted for downscaling/upscaling. Moreover, a reference to EPSG system should be provided. - Section 3.2.1, page 10, paragraph 1-5: You are encouraged to include some references on your assumption “these areas are, therefore, primarily not within the focus of the SQR assessment method”. - Section 3.3, page 12, paragraph 20-24: when you state “the most frequent hazard indicator” you mean “the most extensive/widespread hazard indicator”. Please, explain. - Section 3.3, page 13, paragraph 5-10. How you produced map in Figure 12? I guess some species/group of species might have overlapping growing conditions, resulting in overlaps of marginal lands suitability of these crop. Could you better explain how you dealt this issue?

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