

Interactive comment on “Study on the drought risk of maize in the farming-pastoral ecotone in Northern China based on physical vulnerability assessment” by Z. Wang et al.

Anonymous Referee #2

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The paper presents a case of study of the drought risk of maize in Northern China based on physical vulnerability assessment. The physical vulnerability curve was constructed from the relationship between drought hazard intensity index and yield loss rate. The risk assessment of agricultural drought was conducted from the drought hazard intensity index and physical vulnerability curve. Drought hazard intensity index estimation is based on the daily water stress from EPIC model and yield loss contribution rates for different growth stages. Based on the distribution of drought hazard intensity index, the drought hazard intensity index in different regions was analyzed. Then, the yield loss ratio was obtained from the difference of yield with two different scenarios (sufficient irrigation and no irrigation). A Logistic model was used to simulate

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the physical vulnerability curve of crop from the relationship between hazard and loss. According to the physical vulnerability curve, both the physical vulnerability assessment and risk assessment of yield loss ratio were analyzed. The topic of the paper is interesting and the manuscript is well written. I proposed the publication after some minor revisions.

General Comments: 1)It is important to include in some part of the introduction the differences about hazard, vulnerability and risk, because sometimes are used indistinctly. For example, the author can use as basis the terminology used by UNISDR (<https://www.unisdr.org/we/inform/terminology>). 2)It can be seen in figure 5 that the drought hazard intensity index has a cyclic behavior with a return period of 20 years aprox. How is this considered in the risk assessment? 3)It could be illustrative to include in the conclusions the weaknesses and limitations of the approach. 4)It is difficult to read some figures because the size of labels is too small.

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