

Interactive comment on “Empirical Study on Drought Adaptation of Regional Rainfed Agriculture in China” by Z. Wang et al.

Anonymous Referee #2

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This manuscript investigated the regional drought adaptation from the perspective of coupled human-environment system which does share interesting points to the readers of NHESS. The empirical approach to link scientific data and regional/local policy should be encouraged and the complexity embedded in the coupled system needs thorough analysis considering not only recorded and observed phenomenon but also the driving mechanism within interactive human and environmental factors. This also needs a perspective from a longer history, particularly dynamic changes in variables, in a regional scale. This paper attempts to investigate the dynamic balance and the interaction among environmental changes, development demand and adaptation measures. The concluding points drawn from their data analysis seems to be reasonable. However, there are some revisions needed to be done before publication.

First, the conceptual model is interesting, but the development demand needs to be

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defined clearly. How are we going to quantify the development demand and how is the result compared to environment pressure? If water is the key element of natural resources in this region, the demand and pressure should be linked to water usage in the region. Only if the relationship between development demand and environmental capacity is quantified, we can further discuss the dynamic equilibrium.

Second, the policy of "returning farmland to forest" seems to be major driving factor of the land use/cover change in the region. How is the policy influencing farmers' production and livelihood? The authors mentioned that they have collected data through a survey. I suggest the authors to do some further analysis of the household level data to better illustrate the interaction between policy and farmers' behavior. That will bring some new insights to readers.

Third, the government in the region has taken many adaptation measures. It is suggested to list those and link them with timeline or the model. It would be good to know the overall investment and the crop income (varying with price) in the region. This analysis can also be linked to the household level survey data. The authors mentioned that people improved adaptability by changing hazard environment. Please be more specific how this is implemented.

Finally, some terminology needs to be checked. For example, the hazard environment, the hazard affected entities, etc. Some units also need to be check. The paper is more like a case study instead of empirical study. Please consider to change the title.

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