

Review 'Assessing the economic impacts of drought from the perspective of profit loss rate: a case study of the sugar industry in China'

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1 General remarks

In this paper, the authors propose to analyse the impacts of drought on an economic chain, the sugar industry. Their case study is located in China and the data used refer to the 2009 drought. The economic chain they study is composed of a sugar company and several sugar-cane growers. Their main contribution is to propose a method to set representative prices for sugar with and without drought and to compare profit loss of the two actors of the economic sector they take as case study. The conclusion is really interesting and reveals the fact that when intermediaries fix the price of order, growers have no possibility to compensate the loss of yield by an increase in price. The structure of the paper is clear. However, I think this paper could be improved. I proposed some remarks and recommendations for each section in the following document.

2 Remarks and recommendations on 'Introduction'

In the review of literature, several approaches are detailed but the authors do not explain which elements of those methods they capture in their approach. For example, it is not clear which aspects of Chau et al (2015) approach they take. In the same vein, macroeconomic approaches such as CGE or IO approaches are cited but the authors do not precise why they are useful for. I was very surprised that no literature was cited concerning the use of autoregressive error model in the introduction. Some references are cited in the section "estimation of the sugar price in disaster free scenario" but more justification for using this modelling approach is required.

Globally, I recommend to the authors to better situate their contribution in the literature of the economic evaluation of natural hazard.

P 1532, 15, I do not understand why the authors refer to CBA. Afterwards, no link is done with CBA. Either the link they make should be explained, either they should not mention it.

3 Remarks and recommendations on 'Background'

In this section, it is not clear if some other sugar companies exist in the case study area. And if not, authors should explain what are the 20% of sugarcane growers doing with their production. Moreover, the authors do not give information on the sugar market (internal, exportation...). This aspect is crucial to have a better idea of the impact of local drought on the market price of sugar. The terms of the contract between the farmers and sugar industry should be detailed to better understand the propagation of drought consequences through the chain. Are the quantity to produce for the farmer fixed? What happen if the farmer can not fulfil those requirements? ...The term of "order performance rate" should be already mentioned in this section and better explained.

4 Remarks and recommendations on 'Economic impacts on sugar value chain from drought'

P_{order} is introduced in the equation (2) but has been hardly discussed before although it is a critical parameter. I recommend to the author to further detail how this price is fixed.

In the same way, it is not clear what W refers to.

It should be better explained why fixed costs for growers are yield dependant while fixed costs for the industry are really fixed.

Finally, the most important aspect for me is that the parameters considered by the authors are fixed. Given the uncertainty the authors mention in introduction, this analysis should be supplemented by a sensitivity analysis. In particular, this would enable to study the influence of parameters such as P_{order} , $P_{sugar-non}$ and $P_{sugar-disa}$.