

Minor comments

List of affiliations: add the affiliation number

Line 4: including the methodologies for calculating natural hazards' indices

Line 81: check the citation format. I suppose it should be (Liberati et al., 2019)

Line 86: check the same citation as in line 81

Line 132: insert an empty line before "Food security", which is a new definition

Line 176: check the dot after 2011

Line 281: Li, Z., Zhang, Z., Zhang, J., Luo, Y., and Zhang, L. (2021). A new framework to quantify maize production risk from chilling injury in Northeast China. *Climate Risk Management*, 32. doi:10.1016/j.crm.2021.100299. This study proposes a Chilling Index to evaluate the effects of low temperatures on maize. However, it does not show the application of an index insurance scheme even if in the conclusion the index is considered promising for possible practical applications in the insurance field.

Line 300: basis risk

Line 314: check the brackets on Martinez Salguero

Line 345 and following: Monteleone, B., Borzì, I., Bonaccorso, B., and Martina, M. (2022). Quantifying crop vulnerability to weather-related extreme events and climate change through vulnerability curves. *Natural Hazards*, (0123456789). doi:10.1007/s11069-022-05791-0 This study shows crop vulnerability functions for various weather-extremes and reviewed the methodologies used to derive them, among which crop modelling.

Line 357 to define

Line 366: remove 365

Line 374-375: It is well known that climate variables present a certain degree of uncertainty when they are predicted. Therefore, this aspect needs to be considered when estimating losses caused by climate-related events (Smith and Matthews, 2015)

Line 406: Figueiredo, R., Martina, M. L. V, Stephenson, D. B., and Youngman, B. D. (2018). A Probabilistic Paradigm for the Parametric Insurance of Natural Hazards. *Risk Analysis*, 38(11), 2400–2414. doi:10.1111/risa.13122. This study, even if not focused on crop insurance, provides a nice overview of basis risk and the issue you are addressing in the paragraph.

Line 427 and 429: check the brackets on Turvey et al. and Sacchelli et al.

Lines 425-430: please refer explicitly to figure 2 to enable the reader to clearly understand the meaning of the paths mentioned in the text.

Line 491: check the font of the citation (Bhering et al.)

Line 507: check citepeterson2001report

Line 517: close the bracket after (values below K)

Line 525: model M1

Line 539: it seems from the following lines and Table 4 that you identified 6 clusters and not 5. Please correct or explain the reason for which you state that you identified 5 clusters.

Line 559: it is possible

Line 571: I do not find figure 7. Maybe you would like to cite Figure 5?

Line 614: testing should not have a capital letter