

## ***Interactive comment on “Risk identification of agricultural drought for sustainable agroecosystems” by N. R. Dalezios et al.***

### **Anonymous Referee #2**

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The manuscript provides a mature expert review on agricultural drought. The concepts are subsequently applied to a test area in Thessaly (Greece) where agricultural drought is the most important meteorological hazard with serious socio-economic consequences. The manuscript presents a methodology for agricultural drought detection and monitoring.

Minor comments 1. Some references could not be found and need checking, e.g. univ. of Hawai, 2003 and Univ. of Nebraska, 2004 2. Figure 4 (or Fig. 4) includes names that are not mentioned in the text. Conversely place names in the text cannot be found on the maps of Fig. 4. This confuses the reader. 3. The methodology of using indicators for agricultural drought detection is simple yet robust for drought detection and monitoring. Can the authors comment on how their research contributes to early

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warning, and in particular on the certainty with which the warning can be issued from early in the season (ie month of May) and how this certainty progresses during the warm season or as drought sets in? 4. Table 3 provides the data for figure 5 and Table 4 provides the data for Figure 6. Consider deleting the two tables from the manuscript and providing them through the webservice of the journal. One decimal is enough for average and SD. 5. Figure 5: one decimal is enough for the average number of pixels as more clutters the figure. Consider using a larger font for Figures 5 and 6.

Major comments 1. A more fundamental comment is the curve fitting of the number of pixels affected by drought averaged over the investigated years. The curves are fitted to the averages of data presented in table 3 / table 4. The question is whether average data support the curve fitted. In addition, no analysis is provided (Figure 7, equations 4&5) with respect to the goodness of fit (only  $R^2$ ). A probabilistic approach would deserve merit here. 2. The authors mention irrigation in the area. Can they include in their analysis how irrigation influences the indicators and the number of pixels affected by agricultural drought?

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