

## ***Interactive comment on “Generalized drought assessment in Dongliao river basin based on water resources system” by B. S. Weng et al.***

### **Anonymous Referee #1**

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Dear Editor

The manuscript discusses a comparative study between the “generalized drought assessment index”, calculated from the perspective of water resources system (but this latter concept is not clearly explained in the text), and the same index when calculated using more traditional approaches by considering, as a study case the Dongliao river basin in China. GIS elaboration and spatial distribution maps are provided to support the discussion.

From a general point of view this subject seems to be valuable for the publication, however the manuscript has many unsatisfactory points, especially in the poor description of the adopted methodologies and in the interpretation of results.

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As a first point I have to stress that English is largely not adequate and poor for the publication on an international journal. Often it is not clear if the lack of clarity in the text is due to this rough use of the language or to abrupt approximations in the description of the theoretical aspects.

As I've already stated above the main problems are in the methodological aspects which are not adequately explained. Authors should introduce variables, equations and GIS procedures for mapping only after they have given a clear explanation on what they are doing, which includes the meaning and the importance of the various parameters involved. Sometimes the manuscript appears as a list of numbers and acronyms which are not really comprehensible ... since an acronym, even when it is fully expressed in words, don't say anything about the embedded concepts if it is not explained at least in a synthetic way.

So, as an example, instead of making a long and scarcely useful list of techniques in the introduction, authors should explain more what they really did and why: line 20 (6706) to line 2 (6708) is a long list of methodologies which results in a simple enumerations of names which are not discussed and it's not possible to fully understand. If you really want to maintain it (but I disagree in keeping things that are not functional to the scientific goal of the article) I strongly recommend a sort of grouping in classes with a little more discussion and, in case, the creation of a flow-chart which can be used as a reference scheme. In addition it's not clear what the authors mean with the terms “germination stage”, “growth stage” and “development stage”.

As a further example of poor and approximate discussion:

- line 15-23 (6708): where do the authors take the information about soils?
- line 24 (6708) to line 8 (6708): averages on how many years? Maybe authors can show the annual distributions in one single plot.
- line 24 (6708): Four seasons? Unbelievable!

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- line 10-13 (6709): badly explained and Jia et al is not in the references so that it is impossible to check.
- line 3-15 (6710): how did you simulate runoff? This part is too long and there are no comments inside with respect to the tables. Data are displayed in three tables but can be displayed in only one.
- line 3 (6711): PSDI was never explained before nor as an acronym, nor his meaning.
- line 8-10 (6712): this matching is not clear at all!

Figure captions are really approximate:

- Figure 1: there are numbers which are not explained.
- Figure 2: what is the black line?
- Figure 4-6: all the elements in the figures have to be explained. It's not clear how the authors built the maps. (geostatistics or what... and which method?)

More in general all the methodological aspects are scarcely described.

After reading the manuscript it's still not clear what is the advantage to use this new approach instead of using the more traditional ones, since a real comparison has not been done.

What I would like to suggest is to widely and deeply review the manuscript, to remove the unuseful descriptions and to introduce clarifying comments to the methodological steps. I also suggest to better comment on the results and to highlight the innovation aspects and all the possible advantages linked to this technique. It must be cross checked that all the symbols, letters, acronyms and figures are adequately explained and introduced when necessary. Only after applying these corrections the manuscript can be reviewed again and, in case and according to the Editor's decision, accepted for publication.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 6703, 2014.

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