

## ***Interactive comment on “A joint probabilistic index for objective drought identification: the case study of Haiti” by Beatrice Monteleone et al.***

### **Anonymous Referee #1**

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The manuscript ‘nhess-2019-296’ treats the interesting subject of objective drought identification by combining in a probabilistic framework two consolidated drought indices (SPI and VHI). Furthermore, the proposed index is a remote-sensing product since precipitations are retrieved from satellite and the VHI is a remote-sensing index. The manuscript can be published after improvement. The authors should take into consideration the following remarks:

Line 31: the two question marks should be deleted. Lines 248-251: The authors should explain why they used the Spearman correlation instead of the most common Pearson correlation coefficient. Of course, there is a reference concerning this subject (Wedgbrow et al. 2002) but this obliges the reader to find the reference in order to be informed.

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Lines 300-301: 'It is clear from Fig.6 that PPVI identified the reported drought events better than SPI3 and VHI. AUC was 0,828 for PPVI, 0,740 for SPI3 and 0,784 for VHI.' We cannot observe the values 0,828 for PPVI, 0,740 for SPI3 and 0,784 for VHI referred in the figures.

Lines 326-328: 'Short-term droughts are often not reported in text-based documents, and information on drought start and end date were retrieved from documents that mainly described the impacts related to drought. PPVI showed a good agreement with reported information in identifying the areas of the country hit by the drought.' In Fig. 7, in the 'Observation' sub-figure, no department is highlighted in red. Does this mean that no drought was observed, or is this a mistake? In the former case, the authors should comment on this situation. In Figures 7 to 9 there is a comparison of indices and 'Observation' concerning the various departments of Haiti. Please define the criteria according to which a department is highlighted in red (drought conditions). Table 11. 'Reported as drought': Define the criteria of this classification.

Lines 365-366. A comparison of PPVI performances to the ones of other composite indices, would be a considerable improvement.

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