

***Interactive comment on* “Remote sensing in an index-based insurance design for hedging economic impacts on rice cultivation” by Omar Roberto Valverde-Arias et al.**

Anonymous Referee #2

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I. General comments: The paper is within the scope of the journal. The paper is characterized by scientific innovation and generality, since the methodology can be applied in different regions and climatic environments. In that sense, it is extremely useful presentation of a new approach. The paper is very well and analytically presented with detailed description of the steps followed and explanation of the corresponding results.

II. Technical-scientific comments: 1. Lines 79 and 118. In reviewing the existing remote sensing literature, it is worth to mention the system Copernicus, with Sentinel 1, or 2 or 3, which is very promising with improved resolution (20-30 m) and what is the expected improvement in the accuracy of the analysis. The authors should add comments and

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references, and/or comparisons. 2. Lines 73, 83-84 and 113. Agroecological zones. The proposed methodology uses principal component analysis (PCA) for classification. The subject of agroclimatic classification and zoning is large, which considers different methodologies, including combinations of satellite indices, besides PCA. The authors should mention the main existing literature in the subject, since there might be potential improvement of the conducted agroecological zoning. 3. Line 127. A clarification is required about the NDVI_ave data used: (1) these are annual values?, (2) which means that for each pixel there are 17 values? (3) How the sample points of 30% are selected? randomly? Why only 30%? (4) the rest are used for validation or not used at all? 4. Line 142. For rice estimation, what NDVI_ave values are used? annual per pixel?

III. Technical corrections: 1. Line 102. Never a sentence starts with number...: instead of 84%, write: " , where 84%...". 2. Line 120. Instead "... the precipitations", write "rainy season". 3. Line 277. Instead of "Once that...", write "Since..." 4. Line 304. Never a sentence starts with number...: instead of 25%, write: " , where 25%...".

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