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Interactive comment on "Trend of standardized precipitation index during Indian summer monsoon season in agroclimatic zones of India" *by* S. Jha et al.

Anonymous Referee #2

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General:

Authors have computed SPI from 0.5 x 0.5 gridded monthly CRU rainfall data for 14 agro-climatic zones of India for monsoon months and monsoon season as a whole. They have applied trend test to this data for different zones and months of India during monsoon. The conclusions are important and have utility in many applications. Under changing climatic conditions these types of studies are very relevant. This is a good study and needs to be published.

Specific:

1. Now India has been divided into more agro-climatic zones (more than 100). So

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author should justify what 14 agro-climatic zones (an older definition) is used here. May be from rainfall point it is ok to divide the country into more broader zones. This aspect has to be mentioned in the manuscript and introduction.

2. How good is the CRU monthly data over India? Is there any study to compare this with other datasets like Xie-Arkin, GPCP, APHRODITE etc? If yes, the reference and their conclusions are to be included in the methodology section.

3. There is a good daily dataset by Rajeevan et al., (from IMD) at 0.5 x 0.5 degree grid for India region. Monthly values could be easily computed from the daily data. It will be good to see how CRU data compares with IMD data. If the authors use the IMD data, it will be interesting to see if the conclusions will be same or different. It is worth doing and incorporating the results by computing the SPI and trends from IMD data.

4. It will be interesting to see the change in the frequency of drought at decadal scale (for each decade of the study period) for each agro-climatic zones. 5. Can the table 2 to 6 be put in graphical form (histograms), it will look good, the clarity of conclusions will be more readable.

6. Table A1 need not be given here, rather the reference of definition of 14 ACZ should be mentioned in the text when it appears first.

7. It will be good if the size of the plots in figure 1 made 25% bigger. It will be clearer. Use a common color bar for SPI frequency and another common color bar for SPI magnitude.

8. It would be quite interesting to see the trend of agricultural production over these zones for the same period to justify the trend of SPI and its association. If the authors have access to data, then they should attempt to find the correlation. 9. There are too many references related to climate studies, which are not relevant in this study. They may be removed.

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Interactive comment on Earth Syst. Dynam. Discuss., 4, 429, 2013.

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