The manuscript evaluates drought in the Luan River basin by applying well-known indices and proposing a new methodology based on the combination of human activities. The manuscript structure could be more satisfying. The language is poor and needs to be checked. The figure and table are well-readable. Before publication, there are some significant points to be clarified.

1. There is a lack of scientific discussion. The authors briefly introduce some literature findings but need to clearly identify the position of their proposed methodology in the scientific literature. Moreover, why did they choose just SPI and SRI? I expected to see at least the SPEI, which is quite simple as the SPI. Does the catchment have some groundwater influence? If yes, the time window should be extended to 24 or 48 months to consider such an aspect.
2. I don't agree with this definition of the Human Index. It seems speculation to identify a single point transition from "natural" land cover to "artificial" or "human" land cover. Moreover, the hypothesis that 1979 is the changing point should be carefully explained from a physical point of view.
3. This "Human Index" has been built with a simple linear regression. The authors should at least discuss this hypothesis since the rainfall-runoff generation is entirely non-linear.
4. HI < 0 means that the actual SRI is greater than the theoretical SRI without human activities. L176: "HI<0 has the opposite effect" rephrase this sentence. Moreover, looking at Fig .5, the HI's fitted line always starts from a negative value and continues for several years, making the choice of 1979 less reasonable. Finally, why in the mid 90 years, there are always severe negative values? The authors should try to explain this strange behaviour.
5. I suggest significantly improving the explanation of the 4.4 paragraph. I supposed they employed just the verification/validation period to calculate the score. But I'm not sure this is a good evaluation metric since it involves a sum of transition probability. Furthermore, since they proposed a condition probability with a less variable exogen factor, the probability varies less. The authors should better write this paragraph and discuss it.
6. What type of interpolator did they use to obtain the rainfall time series? How is the orography of the catchment? This last information should be inserted in Fig 1.