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Discussions

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Interactive comment on "Water resources management and dynamic changes in water politics in the transboundary river basins of Central Asia" *by* Xuanxuan Wang et al.

Anonymous Referee #2

Received and published: 20 February 2021

General comments: This paper adopts three metrics to quantify the essential factors to drive water politics in the transboundary river basins of Centra Asia. The manuscript is organized logically and well written. The topic is relevant with the HESS audience and fall well within the scope of this special issue on transboundary river and socio-hydrology. However, the following comments should be addressed before its potential publication: 1) The Gini coefficient is traditionally used in economical discipline, which is calculated based on a large population (e.g., tens of millions). In this study, the coefficient is calculated based on 5 countries. Does that make sense to indicate the inequality issue? Actually, we can just compare water resource amount per land area / capita / etc among 5 CA countries to indicate their difference (or the inequality as

said by the authors). So what is the advantage of using Gini coefficient? Also, does that make sense to adopt the threshold value in Table 2 to evaluate inequality level of water issue? Similar concern is also applied to matching degree. As we have very limited country numbers in CA (i.e., 5), it is difficult to obtain a statistically meaningful coefficient. The authors need to demonstrate the rationality of adopted metrics and the threshold values. 2) For the water political event dataset, the authors combine different sources for different periods. The authors need to explain the consistency between TFDD, WWCC, and ICWCCA. 3) The authors are suggested to be careful with some conclusions, which should be drawn logically based on the supporting evidence. For example, in Sect 3.1.2, the authors conclude that "the quantity of water resources was not the causation of water contradictions in CA. Rather, the issues stemmed from the uneven allocation and utilization of water resources among these five countries". In the previous paragraphs, they discussed the mismatch between water and socio-economic elements including population, GDP, and cropland, but they did not discuss why water quantity is not an issue. Besides, at the end of discussion section, the authors discuss the approaches to eliminate conflicts and strength cooperation, which are useful but not logical in the context of research results. In discussion part, the readers may expect some logical deductions from the results, not just slogan.

Minor comments: 1) Ln32, use the latest number for transboundary rivers and other facts. The authors can refer to the papers in the same special issue. 2) Ln61, cite the original literature for the TFDD dataset. 3) Ln94, no rainfall feeds the river? 4) Ln122, what's n? 5) Ln169, release of water exceeds inflow, this confuses me. Especially when the authors say "since the Fergana Valley is an important agricultural region". Should not the agriculture consume a lot of water and cause release much lower than inflow? 6) Ln275, why include Tarim? Traditionally we do not consider Tarim as transboundary rivers. Maybe more specific to discuss Aksu? 7) Ln640, figure 9. The size of line is hard to differentiate as the number of water conflictive events. 8) Ln647, figure 10(b), the title of y-axis should be Number of water conflictive events? Check it.

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