Hydrology and Earth System Sciences Discussions

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
https://doi.org/10.5194/hess-2021-138-RC2, 2021
© Author(s) 2021. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on hess-2021-138

Anonymous Referee #2

Referee comment on "Misinterpretation of hydrological studies in the Lancang-Mekong Basin: drivers, solutions and implications for research dialogue" by Wenling Wang et al., Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2021-138-RC2, 2021

This paper focuses on the politicization of hydrology science in transboundary Lancang-Mekong Basin. It analyses the drivers of politicization, solutions for addressing the misinterpretation, and takes the Lancang-Mekong as an example to explain the politicization. The politicization in transboundary river basin plays an important role in the evolution of cooperation and conflicts, and this paper gives us new insights into this important issue. However, the paper seems more like an opinion paper instead of a research article. Although the manuscript reviews the extant studies of socio-hydrology, the relationship between misinterpretation of hydrological science and socio-hydrology is still elusive and far-fetched. This paper needs major revisions as listed below in detail.

- The introduction part is too simplified to notify us why it is important to conduct this research, what the other researchers have done in this field, and what is the difference between this study and the extant ones. Now we cannot find out the significance of this study, and whether the theory in this manuscript is first proposed or purely an extension of extant theories.
- In the introduction part, it is stated that "*what feeds the uncertainty the most is the interpretation beyond data, different quality and purpose of the hydrological studies that may create a series of controversies and polarize both scientific and non-scientific audience.*" This statement without any reference or explanation seems very causal. More evidences are needed to reach this conclusion.
- The section of "*socio-hydrology and politicization of science*" seems not to clarify why socio-hydrology is relevant to politicization of science. Since this special issue is about socio-hydrology, the clarification is very important. This section now seems to introduce the concept of socio-hydrology and the representation of politicization of science separately, instead of including politicization of science into the scope of socio-hydrology, which makes the narrative far-fetched.
  As stated in the manuscript, socio-hydrology focuses on the human-water interactions and the resulting "emergent behavior", particularly the mechanism that human not only affects hydrological system, but also responds to its variability. However, the only "interaction" mentioned in this section is the interaction between scientists and non-scientists. The section mainly introduces the causes of misinterpretation (scientists v.s. scientists, scientists v.s. non-scientists), and several groups of non-scientists. This

narrative informs us that non-scientists could take effect in transboundary river management, including volunteers, politicians, and subversive actors, yet does not explain how they can affect the interactions between human and water, or how politicization of science affects the human-water interactions.

- The section of "*drivers, techniques and degrees misinterpretation of hydrology science*" gives us three drivers of misinterpretation of hydrological science. As mentioned before, are these three drivers first proposed in this manuscript or transformed from previous studies? How to verify these three drivers are complete or main drivers of misinterpretation?
- The section of "*solutions for de-politicization of science*" introduces three channels, including official channels, semi-formal communication channels, and informal communication channels. However, the manuscript only introduces the features and forms of different channels which already exist, instead of putting up with practical solutions to solve the problem of misinterpretation. Therefore, it is inappropriate to define this section as "solutions".
- The section of "*politicization of science in the Lancang-Mekong Basin*" takes two examples including Pöyry Report and EoE Study to explain the misinterpretation in the Lancang-Mekong. Two main drivers for the politicization of hydrological science are identified. The analysis of the two cases should be imbedded in the framework of the two former sections, so that the analysis framework mentioned before can be proved effective.
- In the part of discussion, the two cases of misinterpretation in the Lancang-Mekong are compared, and the intended consequences of the politicization of hydrological studies. However, it still lacks the discussion on how these factors affect human-water interactions.
- The main innovation should be clarified and compared to extant studies in the discussion part. Is the framework of analysis of drivers/solutions of misinterpretation and its application in the Lancang-Mekong the main innovation?
- The title numbers of sections now is disordered.
- The language should be modified by an English native speaker, since there are many grammatical errors and typos. The word "quantitate" in line 47 is a typo. The "presents" in line 62 should be "present". The title in line 115 is not right. The "strife for" in line 350 should be "strive for". The sentence in line 359 is wrong. The "on the other" misses a word "hand" in line 387.
- There are many sequence numbers in the manuscript, and some of them are listed as (a)(b)(c), while the others are listed as (i)(ii)(iii), which should be unified and reduced.
- Annotations in brackets are abundant, which aim to explain the formal concepts or sentences. But too many annotations increase difficulty to read.
- Figures or tables could be used to visualize the framework of drivers/solutions/consequences of misinterpretations of hydrological science.