

Comment on hess-2021-643

Anonymous Referee #2

Referee comment on "Cooperation under conflict: participatory hydrological modeling for science policy dialogues for the Aculeo Lake" by Anahi Ocampo-Melgar et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-643-RC2>, 2022

General Comments

The Aculeo Lake desiccation is a fascinating example of how complex can water resources management be and why transdisciplinary approaches (e.g., insights from the social and participatory modelling sciences) are needed to address such wicked problems. Given the complexities and difficulties of analyzing this particular case study, the overall development of the hydrological model and the water balance is explained and presented separately and in detail in two technical reports and one peer-reviewed paper (which also explains the causes of the Aculeo Lake desiccation). This article, then, only expands on the participatory evaluation and hydrological simulation of solution strategies related to water management. More specifically, it centres on presenting "the modelling of strategies and results of this process" [...] plus "insights from behind the scenes". Although the case study and the experience gained in the process are valuable, the article should be centred around presenting a novel contribution to knowledge.

After reading the article, the contribution to knowledge appears to be the five steps "guideline for participatory modelling and transdisciplinary efforts in contexts of high conflict and poor information on the hydrological system". This guideline is built from the already advanced Participatory Modelling efforts, such as the categories of participation (BascoCarrera et al., 2017), and more classical problem framing and design of solution techniques, along with the experience gained in the highly political and contested case study. Given the excellent data and experience the authors already have, I strongly suggest re-framing the entire article around this contribution, including a much longer entry on participatory approaches applied to water resources management, their pitfalls, advantages, and why this novel 5-step approach presents a step forward for the hydrological community (modellers, decision-makers, and politicians).

Specific Comments

Line 80: In the statement "The hydrological modeling study collided and strongly collaborated with a participatory process called [...]" What does it mean to collide and to collaborate? Can a study collide or collaborate with a participatory process?

Line 95. In the statement: "Therefore, the importance of this study to shows how to use this tool to work towards effective collaboration and mutual learning, while disseminate their usefulness for transdisciplinarity in hydrological and water resources management." To what tool is it specifically referring to? Is there an innovation in the design of a new tool to water resources management that is being proposed?

Technical Corrections

Line 55: The following statement is not clear "Both the process and the result are connected, as the a legitimate result is part of a credible and salient science collaboration in decision making (Cash and Clark, 2001)"

Line 95: Correct spelling "[...] the importance of this study to shows how to use this tool to work towards effective collaboration and mutual learning [...]"

Line 145 : Correct spelling "[...] we saw an opportunity actively participate in the AVGC process and move towards a [...]"

Line 205: Correct spelling "[...]". On one hand, these instances were used by the modelers (this article authors) to identify additionally questions that were pressing and causing suspicion and conflict."