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Comment on hess-2021-173

Anonymous Referee #1

Referee comment on "Water Resources Management, Technology, and Culture in Ancient Iran" by Masoud Saatsaz and Aboufazel Rezaie, Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-173-RC1>, 2021

I appreciate the authors for their efforts to shed light on such an important subject, but their work has plenty of room for improvement.

1- The article title is both ambitious and ambiguous. "Water Resources Management, Technology and Culture in Ancient Iran" makes the readers expect to learn about an argument on a kind of relationship between technology and culture which has emanated from water resources management. However, throughout the article, the readers do not come across such a reasoning in an attempt to prove that water resources management served as a historical context in which technology and culture intersected or interacted.

2- The topic "Historical Evolution of Life on the Iranian Plateau" does not correspond to the historical period of this study, but it's more of a short introduction that goes back to as early as 90000 years ago and then ends with the advent of agricultural communities in Iran. This topic could have been an introduction to the general history of Iran over the same period of time as that of this study, in view of water issues. This way, the readers could have gained a general knowledge that is precursor to the next discussion. Talking about the migration of Homo Sapience into the Iranian plateau and the history of plant domestication shows little relevance to the main argument. Moreover, Rihel and his colleagues claim that the first farming communities appeared on the Iranian plateau even earlier than 7 or 8 millennia BC as follows: Rihel, S., Zeidi, M., & Conrad, N. J. (2013). Emergence of agriculture in the foothills of the Zagros mountains of Iran. *Science*, Vol. 341, 65-66.

3- In the article, there are some contradictions and conceptual conflicts between some facts mentioned in the different parts of the article. Also, some controversial hypotheses are treated as definite proven facts. For example, on page 10, in the first paragraph, the authors contend that Islamization of water rules was impeded and stopped by some barriers, whereas immediately in the next paragraph they talk about the Islamic Sharia and its rulings about water issues. Also, on the same page, the authors take it for granted that qanat has been native to Iran and spread from Iran to its neighboring countries,

though this subject is still controversial and it's very difficult to pinpoint any given area as the actual cradle of qanat system.

4- The article needs more integration. The facts provided in the article are not very interrelated and interconnected.

5- The article cannot come up with a novel fact, discovery or interpretation. The authors have done a great job to read through many sources and glean a valuable set of information, but all they say is in fact a different rehash of our previous knowledge. The article is not expected to produce new facts or present new discoveries from scratch, but at least it could abstract a novel historical pattern or suggest a new interpretation about a historical link between hydraulic technologies and Iranian culture, by juxtaposing those diverse historical facts.