

Interactive comment on “Sustainability characteristics of drinking water supply” by Jolijn van Engelenburg et al.

Anonymous Referee #1

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Summary: The authors aim to present a systems approach to an integrated assessment of drinking water supply based on narratives of three case studies using DPSIR approach.

Comments: being a quantitative researcher with exposure to narrative style research, I could not appreciate the content presented. The authors allude to an integrated assessment based on system thinking for the first time but only stick to DPSIR framework without motivating its choice. There were mentions of socioecological and sociotechnical systems but I didnt see much content coming out from those respective disciplines, except perhaps DPSIR to certain extent. Why didnt the authors think of system dynamics models that explicitly incorporate feedbacks and are capable of integrating fast and slow dynamical systems. This also then extends to the way case studies were

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dealt with. Given that DPSIR approach is rather linear, I found key important aspects of feedbacks, synergies and tradeoffs between various driving, state, impact and response variables. For example, some pressures such as due to population growth might be influenced by policy responses of past actions such as providing reliable and abundant water supply. These are quite important if SDGs are to be investigated. In this regard I found the choice of the framework used by the authors as not well justified. I also had difficulties appreciating the discussion as I found tables synthesizing aspects of the three case studies repetitive.

If the authors are intending to revise and resubmit, I would challenge the authors on providing a more sound basis for the choice of DPSIR framework in their pursuit of holistically assessing the sustainability of drinking water supply systems while not ignoring key aspects of feedbacks between slow and fast dynamics of sociohydrological systems that supply systems are embedded in. What could have been innovative would perhaps be a narrative treatment of how water supply systems might themselves have emerged from the underlying sociohydrological dynamics, locking them into a path towards unsustainable development (e.g. water supply systems that emerged in water abundant/flood prone countries might not be as resilient to drought events as those that emerged in latter drought prone systems). The case studies presented provide abundant material to shift the narrative in this direction.

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