Review of: "Revitalizing Key Conditions and Integrated Watershed Management Approach to Sustain Water Availability and Agriculture in Semi-Arid Regions"

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Potential competing interests: No potential competing interests to declare.

Congratulations to the author on producing a comprehensive and insightful article addressing the critical issue of water availability and agriculture sustainability in semi-arid regions. The article titled "Revitalizing Key Conditions and Integrated Watershed Management Approach to Sustain Water Availability and Agriculture in Semi-Arid Regions" makes a significant contribution to the field by highlighting the challenges and proposing key conditions for the successful implementation of integrated watershed management.

The abstract provides a concise overview of the article, emphasizing the importance of integrated watershed management in preventing and rehabilitating watersheds, particularly in semi-arid regions. The identification of constraints, such as poor institutional support, lack of participation, and inappropriate use of technologies, adds depth to the understanding of the challenges faced in implementing this approach.

The introduction effectively sets the stage by addressing global desertification as a major environmental problem and linking it to various factors like climate variability, human activities, and poor land management practices. The mention of the significant percentage of the global population residing in drylands emphasizes the urgency of finding sustainable solutions for water availability and agriculture in these regions.

The article skillfully navigates through the complexities of dryland agriculture, pointing out the unique challenges posed by water scarcity, low soil fertility, and the dominance of rainfed agriculture in Sub-Saharan Africa. The emphasis on the water requirements of dryland crops and the scarcity of water resources underscores the necessity for improved land and water resource management.

The article appropriately introduces the integrated watershed management (IWSM) approach as a potential solution, acknowledging its past successes in soil and water conservation interventions. However, the recognition of failures in achieving sustainability highlights the need for a nuanced understanding of the constraints faced by the IWSM approach.

The conclusions section succinctly summarizes the key findings, emphasizing the need to address specific constraints hindering the success of the IWSM approach. The identified constraints, including poor institutional support and inadequate planning, are well-founded and align with the challenges faced in similar contexts. The proposed key conditions, such as institutional, legal, and policy support, as well as proper resource management, are logical steps

toward revitalizing the implementation of IWSM.

In conclusion, the article effectively combines a thorough literature review with valuable personal observations to offer a holistic understanding of the challenges associated with water availability and agriculture sustainability in semi-arid regions. The proposed key conditions provide actionable insights for policymakers and practitioners involved in watershed management, and the call for evaluating the performance of IWSM in terms of environmental, economic, and social aspects adds an important dimension to the discussion. Overall, the article is a commendable contribution to the scientific literature on integrated watershed management and its role in addressing the pressing issues of water scarcity and agriculture sustainability in semi-arid regions.

However, there are some imperfections that need to be remedied. I'll mention a few in particular, especially those relating to bibliographical references:

- The number of bibliographical references cited in the text is around 16, which I find very meager.
- The article is based mainly on two references, namely: Koohafkan and Stewart, 2008 (cited 30 times) and Suhas, P., et al. 2011 (cited 29 times).
- Several references cited in the biographical list and not cited in the text (Example: Kumar et al. (2019); Marin et al., (2017); Molden et al., (2010); Negasa, D. J. (2020) and many others).
- References cited in the text are not cited in the bibliographic list (Example: Binyam and Desale, (2015); Christopher et al. (2016) and others)
- The way in which bibliographical references are written in the text is not standardized (Example: Binyam and Desale, 2015 and Binyam, A., & Desale, G. (2015); Daniel, 2020 and David, M., et al. (2010); and others).
- When citing several bibliographical references, they should be put in chronological order (Example: Pathak et al., 2009; Elaine et al., 2013; IISD, 2003; Magaly and Thomas, 2016; Koohafkan and Stewart, 2008).