Review of: "Integration and Implementation of Multiple Soil Sensors for Automated and Regulated Irrigation"

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Potential competing interests: No potential competing interests to declare.

1. In comparison to extant research on irrigation systems based on IoT, the paper may not provide substantial innovation.
2. The paper may overemphasise climate change without providing concrete solutions that are directly linked to the proposed system, despite the fact that it is a critical issue.
3. The problem statement may be too general, failing to specify the specific voids that the research seeks to address.
4. The system's applicability across a variety of agricultural contexts may be restricted by the emphasis on a restricted number of soil parameters (moisture, pH, and NPK).
5. The discussion on climate impacts (e.g., hurricanes, floods) may be overly generalised and lack a direct correlation to the proposed system's design and application.
6. The study may disregard the variability in soil properties across various regions and climates, assuming uniform soil conditions.
7. The paper may be less accessible to non-specialists in agriculture or IoT due to the presence of excessive technical jargon.
8. The proposed system may not be cost-effective, which is a critical factor in its adoption in resource-limited environments.
9. The paper may be overly reliant on technology without taking into account potential challenges such as sensor calibration errors, data transmission failures, or power supply issues.
10. The system's performance may not be adequately validated under a variety of environmental conditions due to a lack of comprehensive field testing.
11. The accuracy and reliability of the sensors, particularly the low-cost ones, may not be sufficiently addressed or verified.
12. The paper may not address the scalability of the system, particularly in the context of large-scale agricultural operations.
13. The paper may fail to account for the socioeconomic factors that influence the adoption of new technologies by producers, particularly in developing regions.
14. The study may not offer adequate data or analysis regarding the system's enhancement of water use efficiency.
15. The integration of sensors and the IoT system may be inadequately specified, which complicates the process of replication.
16. The system may depend on external power sources without considering energy efficiency or alternative energy

solutions, such as solar power.

17. The paper may fail to incorporate real-time data validation for the sensors' collected data, which is essential for guaranteeing the system's dependability.
18. The environmental impact of deploying multiple sensors across farmlands, particularly in relation to e-waste, may be disregarded.
19. The system's practical relevance may be restricted by the failure to involve key stakeholders (e.g., farmers, agricultural experts) in the design and testing phases, as evidenced by the paper.
20. The control algorithms employed for irrigation may be excessively simplistic, as they fail to consider the intricate interactions between soil and plants or weather patterns.
21. The paper may overlook the significance of data security and privacy, particularly in the context of the wireless transmission of sensitive agricultural data.
22. The use of SMS alerts as the primary method of user interaction may be outmoded and less effective than modern app-based interfaces.
23. The paper may fail to address potential latency issues in the wireless communication system, which could result in the postponement of critical irrigation decisions.
24. Readers may be uncertain about the advantages or disadvantages of this system due to the absence of sufficient comparative analysis with other existing systems.
25. The study may not provide data on the durability and lifespan of the sensors used, which is crucial for long-term sustainability.
26. The paper may exaggerate the current capabilities of IoT in agriculture without recognising technological limitations or challenges.
27. The paper may fail to account for the necessity of user training or the user's capacity to effectively manage and troubleshoot the system.
28. The sensors and the system as a whole may be inadequately addressed with respect to potential maintenance challenges.
29. The paper may fail to address the potential limitations of the proposed system's applicability by failing to address the ways in which it could be integrated with existing agricultural practices or systems.
30. The paper may present excessively optimistic interpretations of the results without adequately acknowledging the limitations and potential biases in the data or methodology.