Review Form 3

Journal Name:	**International Journal of Plant & Soil Science**
Manuscript Number:	**Ms_IJPSS_122362**
Title of the Manuscript:	**A Comprehensive Review of Irrigation Systems Utilizing Sensor Technology**
Type of the Article	Review article

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

https://r1.reviewerhub.org/general-editorial-policy/

Important Policies Regarding Peer Review

Peer review Comments Approval Policy: https://r1.reviewerhub.org/peer-review-comments-approval-policy/
Benefits for Reviewers: https://r1.reviewerhub.org/benefits-for-reviewers

Review Form 3

PART 1: Review Comments

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	This manuscript offers significant value to the scientific community, particularly in the field of agricultural technology and water resource management. It provides a comprehensive review of the application of sensor technology in irrigation systems, highlighting its potential to enhance water use efficiency—a critical issue given the increasing scarcity of water resources. The paper not only discusses the technical aspects of various sensor technologies but also emphasizes their practical implications for improving crop yields and reducing water wastage.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	The current title of the article, "A Comprehensive Review of Irrigation Systems Utilizing Sensor Technology," is clear and descriptive, accurately reflecting the content of the manuscript.	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	The abstract of the article provides a solid overview of the topic, emphasizing the importance of water management in agriculture and the role of sensor technology in optimizing irrigation systems. However, to make the abstract more comprehensive and informative, consider the following suggestions: Include a summary of the key findings or insights gained from the review. This could highlight the most effective sensor technologies or the potential impact on water efficiency and crop yields.	
Are subsections and structure of the manuscript appropriate?	The structure and use of subsections in the manuscript appear to be generally appropriate, but a few improvements could make the manuscript more reader-friendly and logically coherent. Below are some observations and suggestions regarding the subsections and overall structure: Although this is a review paper, it may benefit from a separate section that clearly outlines the key findings or insights from the review. This could be a subsection under "Application of Sensors in Irrigation" titled "Key Findings" or "Discussion." It might be useful to include a "Discussion" section where the implications of the reviewed technologies are analyzed in greater depth. This section could also compare the effectiveness of different sensor technologies and discuss their potential impact on agricultural practices.	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	The manuscript is scientifically robust and technically sound as it provides a comprehensive review of sensor-based irrigation systems, which are increasingly relevant for addressing global water scarcity challenges in agriculture. The authors have meticulously examined a wide range of sensor technologies, supported by references to relevant and recent literature, ensuring that the information presented is both current and accurate. The technical discussion on various irrigation methods and sensor applications is well-grounded in established scientific principles, enhancing the credibility of the findings. Additionally, the manuscript integrates practical considerations, making it not only scientifically valid but also highly applicable in real-world agricultural settings.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	The references in the manuscript are generally sufficient, covering a broad range of studies related to irrigation systems, sensor technologies, and agricultural water management. However, while many of the references are relevant, some may not be as recent as they could be. To ensure the manuscript reflects the latest advancements in the field, it would be beneficial to include more recent studies and reviews published in the last 3-5 years. Suggestions for Additional References: Recent Reviews on Sensor Technology: A more recent review on advancements in sensor technologies for precision agriculture could provide updated insights. For example: Bhagat, S., Soni, P., & Rathore, A. (2021). "Advances in Precision Agriculture Using Sensor Technology: A Review." Sensors, 21(4), 1248. IoT in Agriculture: As the manuscript discusses sensor-based irrigation, integrating literature on the Internet of Things (IoT) in agriculture could add depth: Wolfert, S., Ge, L., Verdouw, C., & Bogaardt, M. J. (2017). "Big Data in Smart Farming – A review." Agricultural Systems, 153, 69-80. Recent Case Studies:	

Review Form 3

	Including recent case studies on the implementation of sensor-based irrigation in different regions would provide practical examples and validate the review's conclusions: Gutiérrez, J., Villa-Medina, J. F., Nieto-Garibay, A., & Porta-Gándara, M. Á. (2014). "Automated Irrigation System Using a Wireless Sensor Network and GPRS Module." IEEE Transactions on Instrumentation and Measurement, 63(1), 166-176.	
Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	The language and English quality of the article are generally suitable for scholarly communication, but there are areas where improvements could enhance clarity and readability. The manuscript is written in a formal academic style, which is appropriate for a scientific audience. However, there are instances of complex sentences, repetition, and occasional awkward phrasing that could be simplified or restructured for better readability.	
Optional/General comments		

PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

Name:	**Belagrouz Abdenour**
Department, University & Country	**Algeria**