

REVIEWER'S REPORT

Manuscript No.: IJAR- 59162

Title: "BASUTIRTHA INNOVATING RAIN WATER HARVESTING WITH MICRO IRRIGATION TECHNOLOGY RRR MODELS: PROSPECTS AND POTENTIALITY FOR WATER CONSERVATION AND MANAGEMENT."

Recommendation:

Accept

Rating	Excel.	Good	Fair	Poor
Originality	Yes			
Techn. Quality		Yes		
Clarity	Yes			
Significance		Yes		

Reviewer's ID: JPR- 015

Detailed Reviewer's Report

Reviewer's Comment for Publication.

Acceptance Comment are mentioned below suitable for the paper titled "BASUTIRTHA INNOVATING RAIN WATER HARVESTING WITH MICRO IRRIGATION TECHNOLOGY RRR MODELS: PROSPECTS AND POTENTIALITY FOR WATER CONSERVATION AND MANAGEMENT"

Reviewer Comments: Accept

Reviewer Comments –

1. Introduction

The manuscript addresses a highly relevant global challenge concerning water scarcity, conservation, and sustainable water-resource management. The study introduces the Basutirtha Rain Water Harvesting with Micro Irrigation Technology RRR models as practical approaches for improving water-use efficiency. The topic is significant in the context of climate change, increasing water demand, and the need for groundwater conservation. The introduction clearly establishes the importance of innovative and low-cost technologies for sustainable water management.

2. Literature Review

The manuscript provides a relevant overview of rainwater harvesting, micro-irrigation, groundwater recharge, water reuse, and climate-resilient water management. The integration of these approaches

REVIEWER'S REPORT

within community-oriented and low-cost systems provides a useful perspective on sustainable water conservation. The discussion also connects the proposed models with broader areas such as hydrology, irrigation management, wastewater reuse, and watershed management. Overall, the literature foundation adequately supports the objectives and relevance of the proposed RRR models.

3. Solution Approach

The proposed solution approach is innovative and focuses on two practical models: the Basutirtha Rain Water Harvesting with Micro Irrigation Technology RRR Combo Unit and the Basutirtha Wall Garden. The integration of rainwater harvesting, micro-irrigation, groundwater recharge, and water reuse provides a comprehensive approach to efficient water management. The emphasis on low-cost construction and ease of operation further enhances the practical applicability of the models. The approach has potential for adaptation to different cultivation practices and local water-management conditions.

4. Results and Discussion

The results and discussion highlight the potential of the proposed RRR models to conserve and efficiently reuse water resources. The reported potential for approximately 60% water conservation, 40% groundwater recharge, and 25% water reuse demonstrates the intended benefits of the integrated approach. The models also offer potential applications in irrigation, groundwater management, and sustainable cultivation practices. Overall, the discussion demonstrates the practical significance of the proposed technology for improving water-use efficiency and supporting climate-resilient water management.

5. Conclusion

The manuscript provides a valuable contribution to the field of water conservation through the development of innovative rainwater harvesting and micro-irrigation models. The Basutirtha RRR models offer an integrated approach that combines conservation, groundwater recharge, reuse, and efficient irrigation within practical systems. Their potential application by researchers, engineers, policymakers, and communities enhances the relevance of the study. Overall, the manuscript is timely, innovative, and suitable for publication.