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Special Issue Reprint

Agricultural Practices to Improve Irrigation Sustainability

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To ensure global food security under increasing climate variability and to mitigate the impacts of growing water scarcity, it is critical to enhance the efficiency of water use in crop production systems. This challenge must be addressed while safeguarding soil and water resources from potential environmental degradation associated with irrigation, including soil salinization, nutrient leaching, and ecosystem disturbance. Therefore, sustainable irrigation requires approaches that combine agronomic performance with environmental protection. Rather than emphasizing constraints and risks, it is important to adopt a solution-oriented perspective by focusing on agroecological practices that can enhance the sustainability of irrigated agriculture. The contributions to this Special Issue reflect evaluations of the most effective management options, the identification of soil indicators that are most responsive and sensitive to irrigation practices, and studies of recent technological advances that support improved decision-making. By integrating these perspectives, this Special Issue contributes to the identification of management strategies that optimize water use while promoting resilient, resource-efficient irrigation systems.

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