



# Water Management Strategies for Drought Resilience in South Sudan: A Meta-Analysis

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## Abstract

Drought resilience in South Sudan's agriculture sector is crucial for sustainable food security. A systematic review and meta-analysis of peer-reviewed articles from databases including PubMed, Google Scholar, and local agricultural journals. The analysis identified a significant proportion ( $p < 0.05$ ) of studies emphasising the importance of early warning systems in reducing drought impacts on agriculture. Water management strategies that incorporate early warning systems, along with other adaptive practices, are effective in enhancing agricultural resilience against drought conditions in South Sudan. Implementation of an integrated water management approach should include regular monitoring and community engagement to ensure sustainable use of available resources. The empirical specification follows  $Y = \beta_{0+\beta} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *African agriculture, drought resistance, meta-analysis, water scarcity, hydrology, irrigation systems, soil moisture management*

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