



Water Harvesting Systems and Food Security in Arid Nigerian Communities: A Comparative Study

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Abstract

Arid and semi-arid regions in Nigeria face significant challenges related to water scarcity, which impacts household food security. Water harvesting systems are seen as potential solutions to mitigate these issues. The study employs a comparative design, analysing data from three distinct communities using standardised surveys and interviews. Data analysis includes statistical tests for comparing mean differences. Water harvesting systems have shown significant variability in their impact on household food security, with some systems improving food availability by up to 30% in certain areas. While water harvesting systems offer promise, they are not universally effective and require tailored approaches based on local conditions. Communities should prioritise the adoption of proven water harvesting methods alongside other sustainable agricultural practices. Policy makers should support research into locally suitable solutions.

Keywords: *African Geography, Arid Crops, Food Security, Hydrology, Irrigation Systems, Participatory Methods, Smallholder Farmers*

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