African Applied Psychology (Social/Community focus)

# Smart Irrigation Systems in Senegal: Adoption and Usage Rates across Agricultural Districts

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## Abstract

Smart irrigation systems are increasingly being adopted in Senegal to improve agricultural productivity and sustainability. These systems utilise advanced technologies such as sensors, data analytics, and remote control capabilities to optimise water usage. The research employed a mixed-methods approach combining quantitative survey data from district agriculture offices with qualitative interviews focusing on farmer perceptions and system performance evaluations. Findings indicate that usage rates vary significantly across districts, with urban areas showing higher adoption compared to rural regions. A notable theme is the significant reduction in water wastage reported by farmers who use these systems effectively. The analysis reveals substantial disparities in smart irrigation system utilization between different agricultural zones within Senegal. Policy recommendations include targeted subsidies for urban farmers and infrastructure investments to support the integration of smart irrigation technologies into rural communities.

**Keywords:** *African Geography, Smart Systems, Irrigation Technologies, Adoption Rates, Data Analytics, Geographic Information Systems (GIS), Sustainability Measures*

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