African Oceanography Studies (Earth Science focus)

Integrated Watershed Management in Senegal: A Longitudinal Study on Sustainable Agriculture and Water Supply Practices,

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Abstract

Integrated watershed management (IWM) in Senegal aims to enhance sustainable agriculture and water supply practices through coordinated planning at local, regional, and national levels. A mixed-methods approach combining quantitative data analysis with qualitative case studies was employed to evaluate IWM practices in Senegalese watersheds over two years. Significant increases were observed in maize yields (20% increase) and water table levels by 15 cm compared to baseline conditions, demonstrating the efficacy of integrated management strategies. The study confirms that IWM can lead to improved agricultural productivity and sustainable water resources, essential for long-term ecosystem health and food security. Local communities should be actively involved in planning and decision-making processes to ensure effective implementation of IWM practices. Integrated Watershed Management, Sustainable Agriculture, Water Supply Practices, Senegal, Mixed-Methods Approach The empirical specification follows $Y = \vec{\beta_{0+\beta}} \, p \, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African Geography, Sustainable Agriculture, Watershed Management, Ecosystem Services, Participatory Monitoring, Livestock Systems, Climate Change Adaptation*

ABSTRACT-ONLY PUBLICATION

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