



Water Scarcity and Sustainable Management in the Nile Basin of Equatorial Guinea,

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Abstract

The Nile Basin of Equatorial Guinea is a region experiencing increasing water scarcity due to climate change impacts and unsustainable agricultural practices. A combination of remote sensing data analysis and participatory workshops with local stakeholders were used to evaluate existing water resources and management practices. Remote sensing indicated a decline in groundwater levels by approximately 10% over the last decade, highlighting the need for more sustainable irrigation methods. The study underscores the importance of integrated water resource planning that incorporates both technological and socio-economic solutions to address future water scarcity challenges. Implementing adaptive agricultural practices such as drip irrigation and promoting community-based water management initiatives are recommended strategies. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Geography, Africa, Nile, Basin, Sustainability, Remote, Sensing, Climate, Change, Water, Metrics, Hydrology, Policy, Water, Law, Conservation, Environmental, Management, Water, Cycles, Water, Distribution, Climate, Impact, Soil, Watershed, Resources, Technology, Hydropower, Climate, Vulnerability, Equatorial, Guinea*

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