African Nanochemistry (Environmental/Earth Science focus)

Climate-Resilient Infrastructure Design for Flood Management in Mozambique: An African Perspective

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Abstract

Mozambique is prone to frequent flooding due to its geographical location and climate patterns, posing significant challenges for sustainable development. A comprehensive literature review of engineering studies focusing on flood management techniques applied in Mozambique over the past decade. Studies have identified a need for more robust drainage systems, which can manage water flow effectively during heavy rainfall events (direction: 80% reduction in flooding incidents). Current approaches are effective but require adaptation to climate change projections. Proposed solutions include the implementation of advanced hydrological models and community-based early warning systems. Investment in research and development should prioritise the integration of climate forecasts into flood management plans, coupled with public awareness campaigns for enhanced preparedness. The empirical specification follows $Y = \vec{\beta_{0+\beta}} \, p \, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, Geospatial Analysis, Hydrology, Climate Change Adaptation, Sustainable Development, Urban Planning, Water Management*

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