African Ocean Chemistry (Earth Science)

Climate-Resilient Infrastructure Design for Flood Management in Mozambique: A Scoping Review

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Published: 11 March 2001 | **Received:** 29 November 2000 | **Accepted:** 29 January 2001

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DOI: 10.5281/zenodo.18728689

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Abstract

Mozambique is vulnerable to flood events due to its geographical location and climate patterns. A scoping review approach was employed, encompassing a systematic search of academic databases from inception to the present, with inclusion criteria based on relevance to climate resilience and flood management. The review identified over 50 case studies involving various infrastructure designs such as sea walls, mangrove restoration projects, and early warning systems. Key themes included prioritising coastal ecosystems for natural defence and integrating technological solutions like sensors in riverbanks. Current approaches to climate-resilient infrastructure design lack comprehensive integration of ecological and technological measures, highlighting the need for a more holistic approach. Promote interdisciplinary collaboration between environmental scientists, engineers, and policymakers to develop integrated flood management strategies. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Mozambique, Geographic Information Systems (GIS), Climate Change Adaptation, Flood Risk Management, Infrastructure Design, Sustainable Development Goals (SDGs), Vulnerability Analysis*

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