African Nuclear Physics (Pure Science)

Ecosystem Health Preservation Strategies in Coastal Communities of Kenya: An Assessment Methodology Analysis

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Abstract

Coastal communities in Kenya are vulnerable to climate change impacts on ecosystem health. A mixed-methods approach combining quantitative climate data analysis with qualitative interviews and surveys. Statistical models were used to predict future changes in sea level and temperature. Predicted sea-level rise by 2100 could inundate up to 30% of the coastal land, highlighting a critical need for adaptive planning strategies. Developing comprehensive adaptation plans is crucial to mitigate climate change impacts on ecosystems in Kenya's coastal regions. Immediate investment in early warning systems and community education programmes are recommended to enhance resilience against predicted sea-level rise. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Geographical Indicators, Climate Change, Vulnerability Assessment, Biophysical Metrics, Ecosystem Dynamics, Quantitative Methods, Qualitative Research*

ABSTRACT-ONLY PUBLICATION

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