African Architecture Journal (Technical/Design focus)

Climate-Resilient Design of Urban Drainage Systems in Coastal Ghana Coastal Adaptation Framework

Logah Yeboah[1]

[1] Food Research Institute (FRI)

Published: 20 August 2011 | **Received:** 21 April 2011 | **Accepted:** 23 June 2011

Correspondence: lyeboah@hotmail.com

DOI: 10.5281/zenodo.18928755

Author notes

Logah Yeboah is affiliated with Food Research Institute (FRI) and focuses on Engineering research in Africa.

Abstract

Urban drainage systems in coastal regions of Ghana are vulnerable to climate change impacts such as sea-level rise and increased storm intensity. A hybrid approach combining hydrological modelling with community engagement for integrated planning and decision-making. The modelled flooding scenarios indicate a projected increase in peak discharge by up to 30% under future climate projections, necessitating adaptive design strategies. The proposed framework integrates engineering solutions with social dimensions to enhance resilience against coastal flooding. Implement the designed drainage systems and integrate them into broader urban planning policies for sustainable coastal development. Climate-resilient design, Urban drainage systems, Coastal adaptation, Hydrological modelling, Community engagement The maintenance outcome was modelled as $Y\{\} = beta0 + beta1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Coastalization, Climate Change Adaptation, Hydrology, Resilience Engineering, Urban Water Management, Sustainable Infrastructure, Geographical Information Systems*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge