

## ARTICLE HISTORY

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# CLIMATE CHANGE ADAPTATION POLICY AND COMMUNITY RESILIENCE IN COASTAL WEST AFRICA

*Institutional Responses, Localisation Gaps, and Adaptive Capacity in Nigeria, Ghana, and Benin*

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### ABSTRACT

**Background:** Coastal West Africa is among the world's most climate-vulnerable regions, with rising sea levels, increased storm surge frequency, coastal erosion, and saline intrusion threatening the livelihoods, food security, and physical infrastructure of millions of coastal community members. National adaptation policies across the region have expanded significantly under the Paris Agreement's National Adaptation Plan framework, but the translation of national policy commitments into community-level adaptive capacity remains deeply uneven.

**Aim:** This study examined how climate change adaptation policies in Nigeria, Ghana, and Benin address coastal community resilience, assessing the alignment between national policy frameworks and community-level adaptive needs, and identifying institutional and structural factors that condition adaptation effectiveness.

**Methodology:** A mixed-methods research design was employed combining national adaptation policy document analysis, household survey data from 840 coastal community members across six coastal districts in the three countries, and qualitative interviews with 27 adaptation policy practitioners and local government officials. Data were collected between February and November 2025 and analysed using descriptive statistics, binary logistic regression, and thematic analysis.

**Findings:** Significant gaps exist between national adaptation policy provisions and community-level adaptive capacity across all three countries. Financial resource flows from national to community levels are constrained by institutional bottlenecks and weak sub-national governance capacity. Ghana's district-level adaptation planning framework shows the greatest community alignment, while Nigeria's federal fragmentation and Benin's limited technical capacity present more substantial localisation challenges. Community-level social capital significantly predicts adaptive capacity independently of formal policy support.

**Contributions:** The study contributes to climate adaptation policy and resilience literature by providing comparative empirical evidence of policy-community alignment across three West African coastal contexts, and by identifying social capital as a critical community-level resilience resource that formal adaptation frameworks inadequately recognise and support.

**Keywords:** *Climate change adaptation, Coastal resilience, West Africa, National Adaptation Plans, Community adaptive capacity, Social capital.*

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## 1.0 INTRODUCTION

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The coastlines of West Africa are among the most densely populated and climatically vulnerable in the world. Stretching from Senegal to Nigeria, this coastal zone hosts major urban agglomerations including Lagos, Accra, Cotonou, and Abidjan, as well as extensive fishing communities, agricultural settlements, and mangrove ecosystems whose biodiversity and storm-buffering functions are under severe anthropogenic and climatic pressure (Appaning Addo et al., 2022). Sea level rise projections for the Gulf of Guinea indicate increases of between 0.3 and 0.9 metres by 2100 under medium and high emissions scenarios, with associated increases in storm surge height, coastal flooding frequency, and saline groundwater intrusion that directly threaten fresh water access and agricultural productivity (Nicholls et al., 2023).

The global climate governance framework established under the Paris Agreement obligates signatory states to develop and implement National Adaptation Plans articulating their adaptation priorities, financing requirements, and implementation mechanisms. Nigeria, Ghana, and Benin have all submitted National Adaptation Plans and related nationally determined contributions, but empirical research consistently documents significant gaps between national policy ambitions and the adaptive capacity actually available to coastal communities most exposed to climate change impacts (Asante & Boafo, 2024; Olorunfemi et al., 2022).

## 2.0 THEORETICAL AND CONCEPTUAL FRAMEWORK

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### *Adaptive Capacity and Resilience*

Adaptive capacity is conceptualised as the ability of communities, institutions, and systems to adjust to actual or anticipated climate change and its effects, moderating potential damages and exploiting beneficial opportunities. Resilience, a related but distinct concept, encompasses the ability to absorb shocks, reorganise under stress, and maintain essential functions. Both concepts are multidimensional, encompassing financial, technical, social, institutional, and cognitive dimensions that interact to determine the actual adaptation outcomes communities can achieve (Asante & Boafo, 2024). Social capital — the networks, norms, and trust that facilitate collective action — has been identified as a particularly important community-level resilience resource that formal adaptation frameworks inadequately recognise.

### *Policy Localisation Framework*

The policy localisation framework, adapted from global health governance contexts to climate adaptation by Olorunfemi et al. (2022), examines how global and national policy commitments are translated into local governance actions and community-level outcomes. It identifies three localisation failure points: resource flow failures (funding not reaching communities), governance capacity failures (local institutions unable to implement plans), and contextual misalignment failures (policies designed for national rather than community contexts). This framework guides the comparative policy analysis of the present study.

## 3.0 METHODOLOGY

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A mixed-methods design was employed. Policy document analysis examined national adaptation plans, climate finance disbursement reports, and sub-national adaptation planning frameworks for Nigeria, Ghana, and Benin. Household survey data were collected from 840 coastal community members (Nigeria: 320, Ghana: 280, Benin: 240) across six coastal districts, one urban and one peri-urban per country, using stratified random sampling. The survey instrument assessed perceived climate change exposure, current adaptive practices, awareness of adaptation policy provisions, and access to adaptation support. Qualitative interviews were conducted with 27 practitioners. Binary logistic regression examined predictors of adequate adaptive capacity. Thematic analysis examined institutional and structural factors conditioning adaptation effectiveness.

## 4.0 FINDINGS AND DISCUSSION

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### *National Policy Frameworks: Ambition and Architecture*

All three countries have articulated comprehensive national adaptation commitments. Nigeria's National Adaptation Plan, submitted in 2022, identifies coastal erosion management, flood early warning systems, and climate-resilient agricultural practices as priority actions, with an estimated financing requirement of USD 34.6 billion for the 2022 to 2030 period. Ghana's National Climate Change Adaptation Strategy, updated in 2023, includes a district-level adaptation planning framework that assigns specific adaptation responsibilities to metropolitan, municipal, and district assemblies. Benin's Plan National d'Adaptation, finalised in 2022, focuses on coastal protection infrastructure and integrated coastal zone management, though financial provisions are substantially dependent on international climate finance flows (Nicholls et al., 2023).

### **Community-Level Adaptive Capacity: Survey Evidence**

Survey results reveal significant adaptive capacity deficits across all three coastal contexts. Only 31 percent of Nigerian respondents, 44 percent of Ghanaian respondents, and 27 percent of Beninese respondents reported awareness of any formal adaptation support programme available in their communities. Binary logistic regression identifies social capital (OR = 2.41,  $p < 0.001$ ), access to market infrastructure (OR = 1.87,  $p < 0.01$ ), and educational attainment (OR = 1.63,  $p < 0.05$ ) as the strongest predictors of adequate adaptive capacity, while national adaptation policy awareness shows a non-significant effect (OR = 1.14,  $p = 0.31$ ), suggesting that formal policy provisions are not the primary driver of actual community-level adaptation. This finding is consistent with Asante and Boafo (2024) and underscores the importance of social capital as an autonomous resilience resource.

### **Localisation Failures: Governance Bottlenecks**

Qualitative interviews identify three dominant localisation failure patterns. Resource flow failures are most acute in Nigeria, where federal adaptation funding is channelled through state government ministries with limited accountability for sub-national disbursement to community levels. Governance capacity failures are most prominent in Benin, where district environmental offices lack trained personnel to implement coastal zone management provisions. Contextual misalignment failures appear across all three countries, with adaptation plans designed around statistical vulnerability profiles that do not capture the specific livelihood systems, social networks, and cultural practices of individual coastal communities, a limitation documented by Olorunfemi et al. (2022) in the Nigerian context and confirmed by the present study's comparative extension.

## **5.0 CONCLUSION AND RECOMMENDATIONS**

Climate change adaptation policy in coastal West Africa faces substantial policy-community alignment gaps attributable to resource flow failures, governance capacity deficits, and contextual misalignment. Social capital is a critical autonomous resilience resource that formal adaptation frameworks should systematically recognise and support rather than treat as supplementary. Policymakers should redesign adaptation finance disbursement mechanisms to reduce institutional bottlenecks between national and community levels. Community adaptation planning processes should be co-designed with local social networks rather than externally imposed. Regional adaptation knowledge sharing between Ghana, Nigeria, and Benin should be institutionalised through an Economic Community of West African States climate adaptation coordination mechanism.

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