WASCAL
West African Science Service Centre on Climate Change and Adapted Land Use

Federal Ministry of Education and Research

POLICY BRIEF

BUILDING RESILIENCE OF COASTAL COMMUNITIES TO THE IMPACTS OF SEA LEVEL RISE IN GHANA: A GAP IN POLICY

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EXECUTIVE SUMMARY

Ghana's coastal zone faces a looming crisis from sea-level rise, demanding urgent adaptation measures. Despite government initiatives, rural communities are disproportionately affected and underserved. Through a novel approach integrating GIS, UAV tech, ethnography, and expert insights, this study examines adaptation dynamics in three coastal villages, exposing gaps in current strategies. The findings underscore the imperative of tailored, community-centered interventions to fortify resilience and bridge policy-practice divides.

INTRODUCTION

Scientific consensus warns of imminent sea-level rise (SLR) in the 21st century, exacerbated by potential ice sheet collapses. Satellite data analysis reveals a significant uptick in sea surface height, signaling accelerated SLR. The environmental toll extends beyond flooding and erosion to include the loss of critical ecosystems like mangroves. While Ghana implements protective measures in urban areas, rural coastal communities face disproportionate vulnerability. Effective adaptation demands tailored policies addressing the unique challenges of these communities, safeguarding lives, ecosystems, and sustainable futures.

RESEARCH APPROACH

This study adopts an innovative mixed-methods approach, integrating spatial and non-spatial data from primary and secondary sources. Primary data, including drone imagery and surveys, offer insights into SLR impacts and adaptation perceptions. Complementary secondary data, like satellite imagery, enriches the analysis. Analytical methods encompass shoreline assessment, Digital Terrain Model generation, and land use mapping, feeding into the SLAMM model for impact estimation. Statistical techniques, including multinomial logistic regression, uncover predictors of relocation intent. Results inform risk scores based on IPCC AR5 climate risk

KEY FINDINGS

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1. Coastal rural communities with open sandy beaches face higher erosion rates compared to urban areas, necessitating urgent proactive mitigation efforts from local and national governments to protect lives and properties from the ongoing threat of sea level rise (SLR).

2. The vulnerability of socio-ecological systems to SLR impacts is significantly influenced by contextual factors such as topography and proximity to hazard-prone areas, highlighting the need for tailored adaptation strategies.

3. Despite high sensitivity levels, coastal rural communities often exhibit low adaptive capacity, underscoring the critical importance of building resilience to SLR risks through targeted interventions.

4. Cognitive factors aside, compositional factors like household age and income emerge as significant predictors of relocation intention among coastal rural communities in Ghana, as revealed by the study's findings.

POLICY RECOMMENDATION

This study recommends a holistic approach to address the sea-level rise initiative. It focuses on four key pillars to enhance coastal resilience and mitigate the impacts of sea-level rise (SLR):

1. Community Engagement and Awareness:

- Develop comprehensive communication strategies to raise awareness of SLR impacts.
- Emphasize the benefits of adaptation strategies and relocation at the household and community levels.
- Utilize culturally relevant translations and diverse communication formats.
- Integrate awareness campaigns into community events and local platforms.

2. Strategic Zoning and Disaster Risk Management by the Land Use and Spatial Planning Authority (LUSPA) and the National Disaster Management Organization (NADMO) :

- Collaborate with relevant authorities to implement strict zoning regulations.
- Conduct detailed risk assessments to identify vulnerable zones.
- Enforce a 30-meter buffer zone through updated legislation.
- Ensure effective protection of coastal areas through enforcement measures.

3. Economic Diversification and Sustainable Development by the Ministry of Trade and Industry:

- Encourage coastal rural communities to diversify economic activities.
- Support the development of sustainable industries through training and financial incentives.
- Establish a fund to facilitate the transition to eco-friendly businesses.

4. Targeted Adaptation Strategies and Support:

- Focus on cognitive characteristics to promote household-level adaptation
- Provide comprehensive support during the relocation process.
- Develop a support system addressing the physical and emotional well-being of relocated communities.

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