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Policy Brief

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Environmental Hazard and Livelihood Options in a Coastal Area in Ghana: A Case of Sea Flooding

INTRODUCTION

The upcoming 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), in Paris, raises interest in topics regarding climate change and its effects, which would provide concrete proof of the phenomenon and its impact, to drive commitment to international environmental policy. One such effect is the melting of polar ice caps, which is theorized to increase ocean volumes and the sea level along the coasts of the continents, threatening flora and fauna and, consequently, civilization. Paying attention to climate change trends is of global necessity and research into the area will contribute to the evidence of and solutions to rapid climate change and the socioeconomic implications for the coastal areas of Ghana, as inhabitants adapt to and attempt to mitigate the effects.

Globally, coastal regions are crucial to a nation's socioeconomic well-being. The economic importance of the coastal belt encompasses natural resources which support economic activity of the inhabitants and key infrastructure. In Ghana, this is no different. Given the importance of the coastal belt of Ghana, erosion of the shoreline should be of major concern to all stakeholders. It has been observed that, a rise in the water levels has led to fast-paced erosion. The inhabitants of the coastal region experience property damage as homes are flooded, foundations are destroyed and farms are covered with water. With deeper waters at continental shelf, less sunlight reaches the rock bed, reducing the production of plankton for fish to feed on. Fishes tend to move to more plankton rich coasts, thus affecting the fishing industry. Many people in these regions are slated to be

left homeless and without a source of income, since majority of the population rely on crop farming or fishing (or both) for survival.

Additionally, the disappearance of the coastline and its economic resources forces inhabitants to make significant moves to adapt or avoid the destruction of a rising sea-level. Despite the threat of the disappearing coastline, the livelihood decisions made by many at-risk communities do not include migration from the area. The economic and cultural factors that have ruled-out migration have not been extensively explored, given the already sparse research into the subject. Neither has there been sufficient explanation of the motivations for those who do migrate. This policy brief aims to provide an assessment of some of the response strategies to sea level rising in Ghana.

KEY ISSUES

Sea-level Rise (SLR) and Coastal Erosion

The sea level rises an average of 2-3 millimeters per year, eroding at 0.38 meters (0.17meters) per year along the Ghanaian coasts. At erosion hotspots (for example the Accra coast), 80% of the coast experiences erosion. The rate of inundation is determined by natural oceanographic conditions (waves and tides), human activities which loosens the rock and soil structure and the rising sea level. It has been predicted using the SCAPE Numerical Model that the Accra shoreline (and similar erosion hotspots) will move between 120 – 160 meters inward over 100 years. Within that period, the Accra coastal region would lose the following:

- The heavily populated settlement behind the National Arts Centre by 2065
- A major Osu fishing community by 2045
- The Riviera Boat resort by 2035

The threats are not restricted to the Accra coast and the loss can be estimated along the entire coast, with increased erosion, increased flooding, saltwater intrusion affecting agriculture, wave overtopping pushing sand inland, threat to human health, and migration. Suggested causes of the rising sea level include the melting of polar ice due the opening of the ozone layer and global warming. However, proof of this causal effect is yet to be determined.

The effects of rising sea levels and erosion encourage different approaches to survival. Migration becomes an obvious choice but whether it is internal or cross border, permanent vs temporary or full household movement versus partial is based mainly on the needs of the households. Interestingly, leaving home is not considered the sole or most popular action adopted by threatened communities or inhabitants for a variety of cultural and economic reasons. Of 350 households surveyed in this study, 52% of those that experienced flooding in the past month intended to migrate. Noticeably, the livelihoods of the poor and disenfranchised are more heavily affected and reshaped especially in sectors that depend on rain, seasonal employment in agriculture, fishing, pastorals and tourism. With the collapse of fishing industries, the decision to migrate is impacted by the ease with which one can enter into non-fishing occupations like vegetable cultivation, oyster shell harvesting, tourism and hospitality, salt mining and sand and gravel mining.

CONCLUSION AND RECOMMENDATIONS

Coastal areas are naturally dynamic zones that are vulnerable to anthropogenic interventions; hence, the increased pressure for interventions to mitigate its effects. Government's efforts to mitigate sea erosion include the construction of the sea defence walls at Keta and Ada for Land reclamation, beach stabilization and flood control projects which are currently being undertaken. However, a more holistic policy is needed to integrate these with other mitigation plans for the management of coastal erosion and flooding in Ghana.

The following are recommended:

- Involve the media and Civil Society Organisations in climate mitigation efforts.
- Expand shoreline protection and resettlement.
- Expand evidence-based research by ensuring the maintenance of equipment for the collection of data on oceanic behavior.

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