Whose Knowledge Counts? Rethinking Adaptation in Coastal Ghana

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Community adaptations and limits of engineering in coastal Ghana

Coastal communities in Ghana fight year-round against the impacts of climate change, including tidal surges, storms, floods and erosion. Local ecological knowledge and the experiences of elders are key to their day-to-day coping with climate change impacts. The most common community adaptation strategies communities use include cleaning gutters, changing water sources, and using town criers as a communication system for early warnings during floods and tidal waves. In this process, the knowledge of local community elders plays a crucial role. Their adaptation responses are quiet, resourceful and deeply embedded in social relations. They have also learned not to rely heavily on external support for drinking water, housing, and other infrastructure, even though that might ease their vulnerability.

A series of petty trading structures eroded by the sea at Shiabu. © Dorothy Lukhabi

One of the households at Agavedzi was eroded by the sea. © Dorothy Lukhabi

While the local ecological knowledge plays a crucial role in communities' coping mechanisms, it remains largely undervalued in the government's adaptation development projects. The coastal sea defence system, which builds sea walls, is the key adaptation measure in Ghana. The coastal communities have been actively lobbied by the government for sea defences at the beginning of the project to get the communities' support. However, communities were neither fully informed nor consulted about the project's design, impacts or monitoring; local communities were excluded from the decision-making process for sea defence. The engineers who designed the large sea wall infrastructure were mostly from outside of the region and lacked local contextual knowledge. As a result, this project is not well-received among coastal communities due to its inefficacy in addressing climate change impacts. The engineers were criticized for failing to engage with the local communities throughout the project's development.

Sea Defence structure (Groynes) at Glefe in Greater Accra. © Dorothy Lukhabi

Solidarity as a buffer against displacement and dispossession

A major drawback of the sea defence system has been the displacement and dispossession of several coastal communities, leading to further social consequences. This includes family instability, trauma from frequent relocations, poverty due to loss of livelihoods, and increased teenage pregnancies linked to overcrowding and insecurity. The loss of their traditional income, mainly from fishing, makes them, to some extent, susceptible to exploitation in non-fishing jobs by employers. Amid these challenges, the strengths of local communities include social solidarity, reliance on traditional knowledge, and innovation in alternative income sources, such as small businesses. Within the communities, people help each other in times of crisis to the best of their capacity, for instance, by providing food and shelter.

An eroded cemetery at the Blekusu stretch. © Dorothy Lukhabi

Rethinking adaptation as holistic

To address climate change impacts and minimize social consequences, local experts emphasize the need for meaningful community participation in project-based interventions. They highlight the importance of considering the long-term impacts on local communities when planning project interventions. They also urge establishing a system to assess risks and develop appropriate relocation plans when necessary. In this process, it is crucial to engage local communities in addressing the emerging issues from such interventions. As Dorthoty Lukhabi, a CiCADD team member at the University of Cape Coast and expert in climate change, notes:

> *A concrete way for researchers and project designers to co-construct solutions is by bringing all stakeholders together for a joint mapping of local knowledge and lived impacts before engaging engineers, ensuring that the voices of all community members are heard."*

Based on local observations and research, it is suggested that funding agencies should not finance stand-alone hard engineering projects for climate change adaptation, but rather support projects that integrate engineering solutions with local knowledge and soft measures such as monitoring and community-based approaches. Climate change impacts are multi-dimensional and are unlikely to be addressed with a one-size-fits-all approach. For example, the water insecurity in many areas of Ghana is linked to food insecurity, particularly affecting coastal fisherfolk communities. Additionally, climate-related flooding and economic challenges contribute to teenage pregnancy and early marriages, with these issues being more prevalent at the community level than is recognized by government authorities. These issues point to the need for a holistic understanding of societal connections before prescribing solutions.