

Trapped but Resilient: Unpacking the Determinants and Perspectives of Immobility amidst Environmental Hazards in the Volta Delta, Ghana

Introduction

Understanding the link between vulnerability to environmental hazards and migration decision-making is very complex. Slow onset climate-related shocks threaten incomes and wellbeing while sudden onset disasters, in addition, threaten continued inhabitation of places. Communities, households and individuals may continue to remain in situ despite economic pressures from short- or long-term environmental hazards (Adams, 2016). Till date, the dominant theme in the discourse on population immobility is the lack of migration capacity either in economic or social capital terms. While studies have explored the nuances in the economic, political and demographic drivers of migration, very little is understood of the demographic, social and cultural drivers of remaining and adapting in situ.

Studies typically approach the debate on environment and migration, focussing on single aspects of migration aspiration or actual migration (Abu et al., 2013; Codjoe et al., 2017; Gray & Bilsborrow, 2013) with inconclusive findings which overlook immobility. There is a dearth of empirical studies on the phenomenon of involuntary immobility or trapped populations in relation to the environment. Furthermore, the concept of trapped populations or involuntary immobility does not adequately capture the gamut of immobility without an understanding of voluntarily immobility or why populations choose to stay.

That populations remain in the face of adverse environmental conditions should be understood in the light of their resilience, rather than solely as a lack of capacity. Codjoe et al. (2017) suggest considering migration aspirations, actual migration behaviours and immobility holistically for deeper understanding of the interactions between environmental hazards and mobility. A few studies have assessed the extent to which place attachment inhibits the desire to migrate and increases the desire to stay (Adams, 2016; Clark et al., 2017; Willox et al., 2012). Place utility may come from non-economic non-provisioning ecosystem services (Adams & Adger, 2013) whose effects may be difficult to measure. These have sub-observable impacts on people's wellbeing, bonding and commitment to their places.

This present study, using a mixed methods approach, investigates the determinants of voluntary and involuntary immobility and explores lay perspectives on why populations persist in the face of adverse environmental hazards in the Volta Delta of Ghana.

Methods

Quantitative data were drawn from the 2016 DECCMA survey which was conducted among 1364 households across 50 enumeration areas in 9 districts in the Volta Delta. Households were selected through a stratified random sampling approach. The strata were based on levels of geophysical vulnerability of clusters to environmental hazards including temperature, rainfall, elevation and erosion. Clusters were derived from the classifications of boundaries for the 2010 Population and Housing Census. The survey collected data on household location, socio-demographics, subjective wellbeing, material wellbeing, migration and remittances, adaptation, environmental stress, income thresholds and expenditure. Data were analysed, using binary logistic regression, to assess the characteristics of households that do not desire migration even though they were vulnerable to environmental hazards. In all, there were 950 households that indicated vulnerability to at least one hazard.

Individual in-depth, semi-structured interviews and focus group discussions were conducted with two flooding and erosion hotspots in Fuveme in the Keta Municipality and Totope in the Ada East District. These communities were purposively selected due to their high levels of hazard risk. The aim of the qualitative aspect of the study was to assess the reasons for which populations would remain in the current place of residence and resist resettlement.

Results

1. Household vulnerability and other determinants of involuntary immobility

The predictor variables in Model 2 (table 1) explain about 21.4% of the variation in involuntary immobility among households (Nagelkerke $R^2 = .214$.) Households that are not vulnerable to drought are about 38% more likely than those vulnerable to be voluntarily immobile. Compared with male-headed households with female adults, female-adults only households are about 0.6 times more likely to indicate voluntary immobility. In addition, place attachment is positively correlated with voluntary immobility as it is associated with lower odds ($OR = 0.957$) of being involuntarily immobile. High levels of attachment to place connote more social and cultural reasons for staying than lack of financial resources to move (Wilcox et al., 2012). Furthermore, households in communities with high migration momentum are about 64% less likely than those with low migration momentum to be involuntarily immobile. Richer households are therefore expected to be less likely to have members who stay involuntarily as a result of lack of financial resource when compared with poor households. Mean household age correlates negatively with the likelihood of being involuntarily immobile. Generally, as households age

in the place of origin, they are less likely to aspire to migrate and are less likely to be involuntarily immobile.

Table 1. Binary logistic regression models of the relationship between vulnerability to hazards and involuntary immobility in the Volta Delta

	Model 1		Model 2	
Nagelkerke R²	.102		.214	
Independent variables	O.R	CI 95%	O.R	CI 95%
Flooding (Not vulnerable <i>ref</i>)				
Vulnerable	1.149	.673, 1.962	1.248	.707, 2.202
Drought (Not vulnerable <i>ref</i>)				
Vulnerable	.533*	.317, .895	.552*	.308, .990
Erosion (Not vulnerable <i>ref</i>)				
Vulnerable	1.274	.822, 1.974	1.287	.791, 2.092
Household Gender				
Male head w/female adult <i>ref</i>				
Females only	.589**	.397, .875	.512*	.289, .907
Female head w/ male adult	.816	.508, 1.312	1.033	.605, 1.765
Male only	1.371	.918, 2.048	1.255	.511, 3.082
Place Attachment	.941***	.915, .967	.957*	.904, 1.205
Migration attitude	1.012	.969, 1.056	1.028	.982, 1.077
Migration momentum (Low <i>ref</i>)				
Medium	.754	.536, 1.060	.708	.427, 1.176
High	.363***	.235, .560	.359**	.185, .696
Household Sex Ratio			.561	.222, 1.417
Household mean years of education			.984	.932, 1.038
Household dependency ratio			.585	.233, 1.467
Household mean age			.956**	.939, .974
Wealth level (Very poor <i>ref</i>)				
Poor			.685*	.489, .957
Non-poor			.236***	.124, .450
Constant	1.344		2.143	

2. Community and lay perspectives on immobility in the Volta Delta

Dominant themes surrounding voluntary immobility include topophilia, optimism for external or government assistance, sustainable livelihoods, relative ecosystem productivity, and preserving their sovereignty.

Topophilia, which represents the **sense of place attachment** is a key reason why communities remain in the face of adverse coastal hazards, particularly inundation and erosion. Participants from a male focus group discussion indicated that:

“The reason we continue to be here is because almost all of us were born in this town and we are from here. This is our hometown, our farm, where we eat and where we have all that we depend on” (Female FGD, Fuveme)

Community members expressed a strong desire to **preserve community sovereignty**. They perceived that If they moved, they would be subalterns in their destination. They would prefer to ‘suffer in place’ than lose their dignity in another land. Some quotes are below.

“Some people do not want to resettle far from what they call their ancestral homes. They don’t want this sense that our hometown is no longer our hometown.” (Female researcher)

“It is better we die than to be relocated! We better die than to be relocated from here, this is our hometown. We do not have any other home apart from here. This is where we were born! This is where we were born and this is where we are from. We have been here, some die and others are born. It is better to be killed than relocate.” (Male FGD, Fuveme)

Another important reason for which populations persist and would not consider is the **sustainability livelihoods**. Participants expressed the fear of losing their livelihoods that:
“If you want to resettle the people they need basic social amenities like school, hospital, road and water and where is the money? Now when government resettles the people, does it mean they leave the community to be destroyed? And if they leave the community to destroy, then government is not ready to protect its coastline and that is going to affect the Songhor Lagoon which is the main source of people’s livelihood in the whole of Ada.” (Male community leader, Totope)

With regards to **ecosystem productivity**, participants indicated that their livelihoods were tied to their current ecosystems and that where they live gives them unique advantage for them to thrive despite the risk of coastal hazards. One participant opined that:

“We are fishermen here so any resettlement consideration must not be far from the sea. We will continue to be fishers because that is the work we know how to do well and depend on to cater for our kids, the place must not be too far from the sea.” (Male FGD, Fuveme).

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