Climate - Induced Displacement and its Implications on Human Security: A Case Study of Ghana

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ABSTRACT

This paper investigates the socio-economic as well as environmental implications of climate-induced displacement in Ghana, stressing the increasing vulnerabilities of communities hit by floods, droughts, and irregular rainfall. Employing the Human Security and Sustainable Livelihoods Frameworks as its theoretical pillars, this study examines the extent to which environmental stress acting in tandem with social systems undermines both livelihoods and human wellbeing. The study employed a mixed method approach thus: quantitative data were collected from institutional reports and surveys, whereas qualitative information came from interviews and document analysis. The framework of this integrated approach allowed for a holistic view on displacement trends, adaptation, and policy responses in Ghana. Findings largely show that with such climate variability, livelihood insecurity has been intensified, agricultural productivity disturbed, and population movements induced toward urban centers. Poor institutional coordination, lack of early warning systems, and insufficient resource allocation were pinpointed as key issues limiting response efficiency. There is, however, a couple of pieces of evidence of resilience, with a simulation of adaptation in communities and social networks to lessen the depletion along displacements. In essence, the resolution of climate-induced displacement in Ghana calls for coordinated governance structures, impartial monitoring and evaluation frameworks, and the coupling of scientific evidence with participative local planning. Improving adaptive capacity both nationally and at community level is crucial to ensuring sustainable livelihood and long-term resilience against climate shocks.

INTRODUCTION

Climate change, due to human activities, is now considered one of the grave global problems of the 21st century (Kabir et al., 2023: Trenberth, 2018). Its evolution over the years has been largely attributed to the waves of the age of industrial evolution in Europe, America and Asia (Zhang et al., 2011: Albritton Jonsson, 2012) which more or less started a new epoch in the anthropogenic era (Hangsen & Stone 2016: Anderson et al., 2012). Even though there are natural factors like volcanic eruption as Latif (2013) argues that Volcanic eruptions sometimes cause climatic fluctuations, the dawn of the new anthropogenic era according to him triggered an “anthropogenic influence on the climate” (p3). Other Scholars like Pei et al., (2015) whiles employing wavelet analysis argues that the nexus between climate change and “large scale social crises” even date beyond the industrial evolution to the “Pre- Industrial Europe” (p1).

The increasing frequency and intensity of extreme weather events-floods, droughts, storms-as well as slow processes such as sea-level rise and temperature increase, are inducing profound changes in the global environment (Zhang et al., 2021; IPCC, 2022). In the wake of these changes, Owley (2020) argues that one of the most significant and tangible ramifications is climate-induced displacement, wherein people and communities are forced to relocate due to unfavorable climatic conditions.

Multitudes of people are expelled forcibly from their dwellings in consequence of sudden or slow alterations of their surrounding environment due to climate change, from typhoons to rising sea levels (IDMC, 2021; Warner et al., 2019). In the literature of Arcaya (2020, he argues that his set of phenomena causes significant concerns to displaced populations and other core groups within a community by breaking up social networks, economic activities, or access to services essential to human security which is also cited in the 2022 human development report (UNDP, 2022)

Climate-induced displacements have been recognized across the globe as enormous humanitarian and developmental crises. According to the United Nations High Commissioner for Refugees (UNHCR), an annual average of 21.5 million people have been displaced annually by weather-related events since 2008 (UNHCR, 2020). South Asia, the Pacific Islands, and Central America are particularly vulnerable due to their respective geographies and socio-economic contexts (McLeman & Smit, 2016). Consequently, displacement tends to engender a series of crises within these regions, including but not restricted to loss of earnings, poverty intensification, and far-reaching health hazards. The social milieu of communities is oftentimes irreparably wasted as the displaced population strives to find some form of social and economic accommodation in a new setting. Therefore, this situation calls for an immediate policy intervention at both international and domestic levels for addressing issues related to displacement, their root causes, and adaptation (Warner et al., 2019).

In the context of changing climates and varying socio-economic conditions, Africa is arguably the most vulnerable continent to climate change (Bedeke, 2023: Arhin & Amoateng 2025). Some of the problems that confront climate variability and change in Africa include desertification, deforestation, and rainfall variability (Niang et al., 2014). For instance, the Sahel region experiences recurrent drought spells that severely lower crop production, leading to food insecurity and largescale displacements (Tschakert et al., 2019). Kenya and Somalia in East Africa battle droughts as well as floods that trigger thousands of displacements while increasing stress on an already stressed environment (Opiyo et al., 2021). Ghana too has not been spared in this pan-continental damaging scenario.

To the west, Ghana is bordered by the Gulf of Guinea, making it much of a climatic zone-carrier, with coastal savannah, forest, and northern savannah regions (Owusu & Waylen, 2019). Each of these zones is presented with its own peculiar climate-related challenges. Those in coastal areas arise from the risk of sea-level rise and coastal erosion from marine processes; these processes give threats to settlements, agricultural lands, and vital infrastructure (Boateng et al, 2020; Addo et al., 2021). The northern parts, however, are subject to erratic rainfall patterns and long drought spells that further water scarcity and food insecurity due to the threats posed by climate (Yaro et al., 2020; Teye et al., 2021). The greatest climatic pressure has been the foundation for birth in all these attritional environmental realities.

Therefore, climate-induced displacements have emerged as an enormously important issue, with earth systems speeding up migration processes (IDMC, 2021). Displacement disrupts social networks, economic activities, and access to services and, thus, poses serious threats to human security (UNDP, 2022). According to the United Nations Development Programme, "Human security means having economic security, food security, health security, environmental security, personal security, community security, and political security" (UNDP, 2022).

In Ghana, climate-induced displacement affects several aspects that constitute human security-changing methods of economic viability and social cohesion. In the study of Salifu (2021) on the “Climate-induced relocation and social change in Keta” he argues that Coastal areas such as Keta and Ada have undergone home and arable land losses with rising sea levels and also emphasized coastal erosion as a major issue, forcing the residents to move away. These environmental pressures stand bizarrely apart from each other, inciting a wider list of consequences from climate change, with floods and droughts gaining in frequency (Owusu & Waylen, 2019). In the northern savannah regions, communities contend with prolonged droughts and erratic rainfall, which pressure crop production and food insecurity equally (Yaro et al., 2020; Teye et al., 2021). Such disturbances go on to threaten human security as displaced populations find it hard to forge stable livelihoods, obtain health care and education, and get accepted as members of the new communities.

Due to being affected by climate change and the resultant migration, displacement constitutes a multidimensional human security issue. Despite the available literature on climate change and migration, Black et al. (2022) as cited in Borderon (2024) expressed the need for more nuanced knowledge about how displacement specifically affects human security in the Ghanaian setting. The consequences of climate-induced displacement can be seen in coastal areas such as Keta and Ada, where slow-pacing sea-level rise and erosion have destroyed homes and farmlands (Addo et al., 2021; Boateng et al., 2020). Likewise, droughts and erratic rainfall in the northern savannah zones have interrupted agriculture and food production systems and enhanced food insecurity (Teye et al., 2021; Yaro et al., 2020). However, national responses to climate-induced displacement in Ghana have largely been reactive and piecemeal (IDMC, 2021).

One of the issues posed is that there is a lack of coordinated policy frameworks and comprehensive strategies to tackle root causes of displacement and while assisting populations affected (UNHCR, 2022). This policy emptiness and practicality urgently call for a holistic approach integrated with climate adaptation, disaster risk altogether reduction, and sustainable development to enhance human security. Moreover, existing studies have hardly investigated the interface among climate-induced displacement and other larger discourses of human security in Ghana. Most tend to consider impact primarily from an environmental or migration perspective and not from the perspective of how displacement influences economic security, social cohesion, and access to basic services (Salifu, 2021; Ekoh et al., 2023).

Hence, the study aims to fill the gap by examining the effects of climate-induced displacement on human security in Ghana. More specifically, it looks to identify the key causes of displacement, understand the socio-economic impact on affected populations, and review existing policies and strategies. This intention is to help the study contribute Towards effective and sustainable solutions to these complex issues arising from climate-induced displacement and in protecting human security in Ghana.

Research Objectives

This study seeks to Assess the impacts of displacement on the economic, social, and physical security of affected populations.

Analyze the patterns and drivers of climate-induced displacement in Ghana.

Evaluate the effectiveness of current policies and strategies in managing climate-induced displacement and protecting human security

Provide recommendations for enhancing resilience and adaptive capacity among vulnerable communities.

Theoretical Background

The Integrated Vulnerability–Political Ecology Framework

Climate change, displacement, and human security perspective requires, besides environmental triggers for migration, a social and political understanding of the structures that mediate how communities experience change and respond to it. For this purpose, the present study considers an Integrated Vulnerability–Political Ecology Framework from both the Vulnerability Approach and the Political Ecology Theory. Such an integrated approach allows for a multidimensional perspective that interlinks environmental change with socio-political inequality, institutional capacity, and adaptive resilience-all of which are necessary to explain climate-induced displacement in Ghana.

The Vulnerability Perspective

According to the vulnerability approach, exposure to climate risks and the ability to adapt are, instead of considerations of environmental stress, a function of a community's social, economic, and institutional conditions (Adger, 2015; IPCC, 2022). Vulnerabilities, then, are not states but rather forged through historical and structural inequalities requiring access to resources, technology, and decision-making power. For Ghanaian communities dependent on rain-fed agriculture or situated along low-lying coastal areas, displacement occurs more often because their livelihoods and settlements have direct associations with fragile environmental systems.

The process is being enhanced by poverty, weak infrastructure, and few available adaptation mechanisms (Appiah, 2025; Laube et al., 2022). A strong point of this framework, when viewed from the lens of vulnerability, is that it concentrates on human agency and on differential risk; in other words, it acknowledges that not everyone and every group suffers the effect of climate change equally. This is what makes it pertinent in the field of human security, as it emphasizes the conditions that make people more susceptible to climatic shocks and displacement.

However, the main criticism against the vulnerability view is that it often treats vulnerability as a local or technical problem, thus ignoring the larger political and structural forces that create and maintain these vulnerabilities (Adger et al., 2015). Without addressing power relations, policy neglect, and global inequalities,

the vulnerability framework might unjustly allow the affected communities to be viewed as passive pilgrims rather than active actors embedded in a larger socio-political landscape (Brown et al., 2017).

The Political Ecology Perspective

Political ecology complements and furthers the vulnerability approach by emphasizing the political and economic processes in environmental change (Robbins, 2019). It suggests that displacement caused by climate changes cannot be completely grasped without understanding how governance, power distribution, and access to resources determine both exposure to hazards and adaptation. According to this view, displacement is not merely a natural consequence of environmental stress; rather, it is a social-political consequence that arises through decisions regarding land use, development priorities, and institutional responsiveness (Benjaminsen et al., 2012; Klein et al., 2014).

In the Ghanaian frame of reference, the theory of political ecology offers an approach to explore reasons behind the persistence of vulnerability to displacement in certain areas such as Keta, Ada, and parts of northern Ghana despite the presence of nationwide climatic measures. For example, shoddy governance and power relations render unequal such avenues as coastal protection, agricultural subsidies, and disaster management resources in the form of exposure and recovery (Sagoe-Addy & Appeaning Addo, 2013). This theory also brings out that global climate politics and funding mechanisms usually end up further marginalizing developing nations, thereby providing little or no support for community-based adaptation. Political ecology thus places local vulnerability within a broader framework of inequitable policy and resource asymmetry.

The Intersection

This integration of vulnerability and political ecology engenders a more comprehensive analytical framework able to explain both proximate and structural causes of climate-induced displacement. The vulnerability approach gives us a micro-level understanding of how social and economic conditions affect adaptive capacity. Political ecology, with its more macro emphasis, according to (Watts, 2017: Robbins 2019) can explain how vulnerabilities remain due to systemic power inequities, inefficiencies of institutions, and neglect in policies. Both approaches map the range between environmental exposure and socio-political processes, thus showing that climate-induced displacement is not merely a reaction to physical hazards but is very much intricately programmed through the diverse hues of human-environment interplay.

Also, this integrated framework versus directly underpins the concept of human security, which grounds this study. Human security emphasizes the protection of people's livelihoods, health, and dignity from environmental and socio-political threats (Siloko, 2024: Berebon 2025). By linking the two theoretical perspectives, the framework captures climate change as an undermining of human security through both material (economic, food, health) and structural (governance, inequality, policy) processes. It further explains why responses to displacement in Ghana have consisted largely of fragmented policy interventions that address immediate environmental impacts but ignore political and institutional vulnerabilities that maintain insecurity.

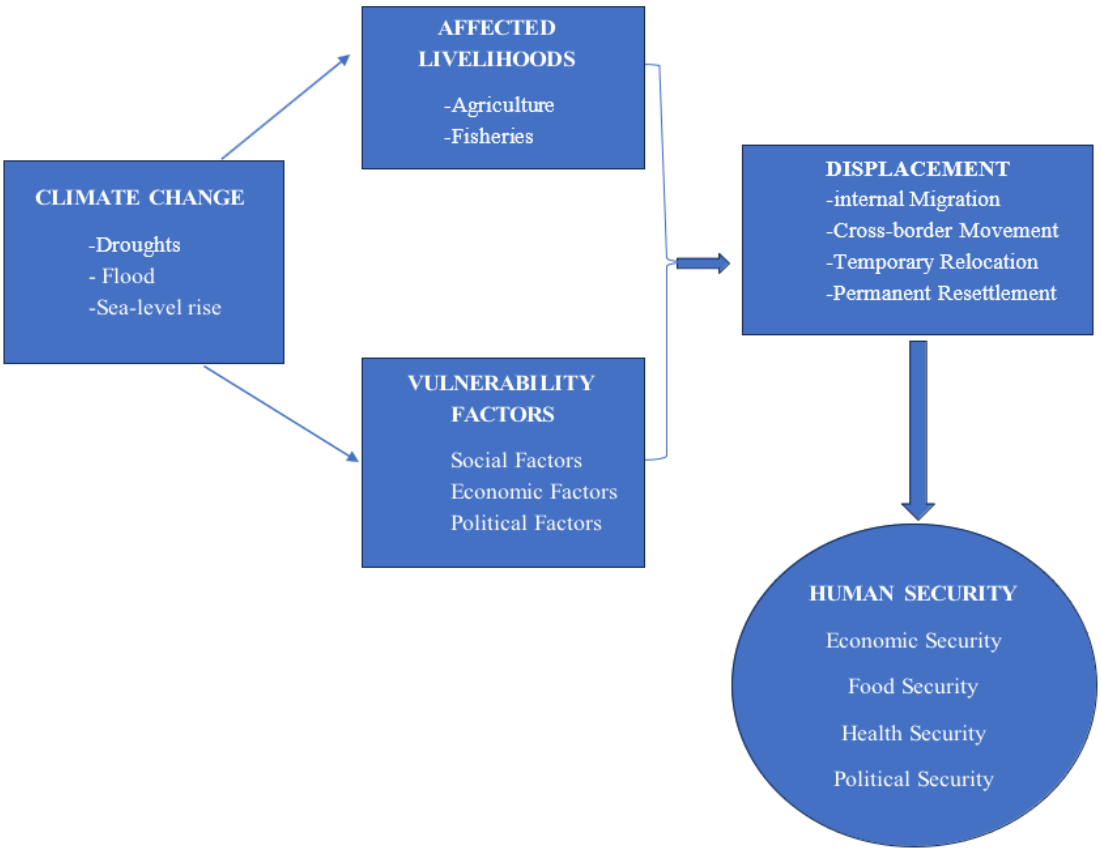
Analytical search about climate displacements in Ghana shall find its conceptual base in the Integrated Vulnerability–Political Ecology Framework. Therefore, this framework permits the assessment of not only the causes of displacements by floods, droughts, and coastal erosion but also the predisposing conditions of human insecurity such as poverty, policy fragmentation, and uneven access to adaptation resources. By giving equal attention to environmental stress and socio-political structures, this ensures that the analysis strays from the shackles of environmental determinism to apprehend the complexities of displacement in Ghana.

The framework articulates that climate displacement operates on both the environmental and governance level. Thus, sound policy measures must respect the causes of vulnerability, including interdependently considered adaptation, equitable resource allocation, and the semblance of institutional reforms to the strengthening of resilience and human security.

Conceptual Framework

The conceptual framework for this study links climate change, displacement, and human security-gaining from the vulnerability approach and political ecology theories-and as illustrated in Figure 1 below. The framework

says that the climate change factors of drought, floods, and sea-level rise are main drivers of displacement. These environmental changes directly impact livelihoods, especially agriculture and fisheries, leading some individuals and communities toward migration. Vulnerability, thus, occupies the central position in determining population response to climate change. Social, economic, and political factors such as poverty, access to resources, and governance mediate the linkage between climate change and displacement. The populations with higher levels of vulnerability are more likely to be displaced. The framework then examines the effects of displacement on human security in its economic, food, health, and political aspects. In doing so, displacement undermines human security by disrupting livelihoods, reducing access to resources, and exposing them to health risks.



Source: Author's Construct (2025)

METHODS AND MATERIALS

This study examined the implications of climate-induced displacement and its effect on human security in Ghana using a mixed method-based approach. The chapter, therefore, describes the research design, study areas, sampling strategy, procedure for data collection, data analysis, and ethical safeguards.

A mixed-method research design was adopted (Kothari, 2004; Creswell, 2014), combining structured quantitative surveys and semi-structured interview qualitative data. Such a design was employed because climate-induced displacement is a multifaceted phenomenon, thus affecting the economic, food, health, environmental, and social domains (Creswell & Plano Clark, 2011). On one hand, the survey generated numerical data about the state, causes, and effects of displacement. On the other hand, the interviews helped derive information on life experiences, policy response, and institutional impediments (Bryman, 2016).

The investigation was conducted in two situations in the climate-vulnerable areas of Ghana, namely, (1) the Coastal Region, particularly Keta and Ada, where sea-level rise, floods, and coastal erosion have displaced entire communities (Addo, 2013; Boateng, 2012); and (2) the Northern Savannah Region, where persistent droughts and erratic rainfall have undermined agriculture and occasioned migration (Yaro et al., 2015; Teye et al., 2015). These two contrasting areas were purposively selected so as to capture displacement patterns induced by water and drought, respectively.

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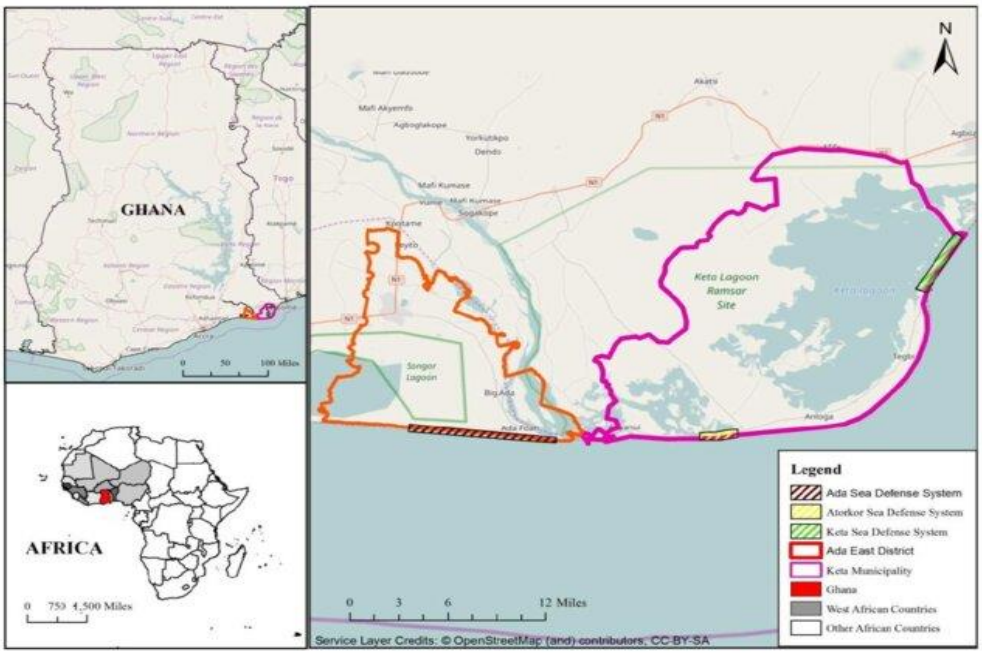
Figure 1 Map showing the Ada East district and the Keta municipality



Data Collection Methods

The data collection method of the study employs surveys to reflect on the quantitative method whiles also employing interviews to represent the qualitative approach. In context of the former, Structured questionnaires were distributed to displaced households in the two regions. The questionnaire included five sections, (i) socio-demographic characteristics of respondents; (ii) causes of displacement based on climate stresses (coastal erosion, flooding, drought, sea-level rise); (iii) economic security (major income loss, changes in employment, access to supports); (iv) food and health security (ability to meet food needs, access to healthcare facilities, issues affecting physical or mental health); and (v) physical or environmental security (housing, water and sanitation, distance to services), allowing the study to test displacement through all major dimensions of human security (King & Murray, 2001).

Also, Semi-structured interviews were conducted with officials, community actors, NGOs, and a few displaced people (Kvale & Brinkmann, 2009). These interviews investigated policy responses, institutional bottlenecks, as well as these people's social and psychological conditions after being displaced. The flexible format allowed probing into context or explaining survey findings.

Since the idea of the survey was to obtain information that could be generalized to the larger displaced population, random sample was used in the selection of displaced households. For the qualitative component, purposive sampling was used to identify key informants who had firsthand experience concerning, or responsibility for, climate-induced displacement (Patton, 2015). Using Cochran's calculation, To determine the sample size for the quantitative survey, the Cochran formula was used to calculate the required number of respondents. The formula is given as:

$n= Z2x\ p\ x\ (1-p) / e2$

Where:

n_0 = the sample size

Z = the Z-value (the number of standard deviations from the mean corresponding to the desired confidence level, e.g., 1.96 for 95% confidence)

p = the estimated proportion of the population that has the attribute of interest (often set to 0.5, which provides the maximum variability)

e = the margin of error (desired precision level, e.g., 0.05 for 5%) n= 1.96 2x 0.5 x (1-0.5) / 0.052

n= 3.8416 x 0.25 / 0.0025

n= 0.9604 / 0.0025

n= 384.16

Thus, the calculated sample size for this study was approximately 384 respondents, distributed between the 2 regions (192 respondents each).

For qualitative data collection involving external stakeholders, a smaller, purposive sample of 10 key informants (5 from each region) was selected. These included government officials, representatives from private sector firms, and international organizations involved in understanding the subject of climate-induced displacement and its effects on human security.

Data Analysis

Quantitative data from the survey was entered using SPSS (version 27) and analyzed. Descriptive statistics (frequencies, percentages, central tendency measures) summarized the characteristics of displaced households and factors driving displacement. Inferential techniques such as chi-square and regression were applied to look at the relationships between displacement and human security indicators- economics, food, or health security.

Qualitative interviews data were transcribed and thematically analyzed (Braun and Clarke, 2006). Coding identified recurring themes such as livelihood disruption, access to service, institutional response, and coping strategies. The qualitative results were used to interpret the deeper implication of the quantitative patterns.

In view of dealing with displaced and vulnerable people, proper moral safety measures were implemented. All respondents gave informed consent; they were told about the purpose of the study and informed of their right to withdraw from it. Lastly, their identities were concealed: all direct identifiers from data collection were removed, and data were used for academic reporting only.

ANALYSIS AND DISCUSSION

Response Rate and Demographic Profile

This very study underwent a 100% response rate and thus all selected people responded to the survey. This helped remove non-response bias and made the findings dependable because the views captured by any means were drawn from the full sample of displaced or climate-affected households that the study was targeting.

In terms of demographic statistics, the data also showed that climate-induced displacement is affecting a rather young population: the largest age group is 18–29 years (42.2%), followed by 30–39 years (28.1%), with only a small share aged 50 and above (9.1%). This implies that people in their productive and economically active years are most exposed to climate-related shocks and movement therefrom.

The gender distribution was almost equal, 50.3% male and 49.7% female, indicating that in the selected Ghanaian contexts, displacement is not gender skewed but affects men and women almost equally.

Educationally, most respondents had some schooling: 36.5% had reached secondary, 30.5% had primary, 21.1% attended tertiary, and 11.9% had no formal education. The composition thus suggests that displaced populations are not only illiterate rural poor; people are being displaced when climate acts on their settlements or means of livelihood, affecting individuals with at least some level of education.

Slightly more respondents represented the Northern Belt (55.7%) as compared to the Southern/Coastal Belt (44.3%), this again relating to the study's focus on drought displacements in the north, as well as coastal erosion and flooding in the south. Employment was mixed: 27.6% casual labourers, 26.6% unemployed, 25% formally

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employed, and 20.8% self-employed. The pattern suggests that a good number of displaced people were already in precarious or informal jobs, thus making them more prone to drastically lower earnings after displacement.

Table 1 Demographic Characteristics of respondents

Variable	Category	Frequency (n)	Percentage (%)
Age	18-29	162	42.2
	30-39	108	28.1
	40-49	79	20.6
	50 and above	35	9.1
Gender	Male	193	50.3
	Female	191	49.7
Education	Secondary	140	36.5
	Primary	117	30.5
	Tertiary	81	21.1
	No formal education	46	11.9
Regional belt	Northern Belt	214	55.7
	Southern Belt	170	44.3
Current Employment Status	Casual labour	106	27.6
	Unemployed	102	26.6
	Employed	96	25.0
	Self-employed	80	20.8

Implications of Climate-Induced Displacement on Human Security

The findings indicated that climate-induced displacement in Ghana affects human security-wide issues such as an economic one, food, health, psychological in nature, and environmental.

Concerning the economic factors, most respondents reported income decline after being displaced (59.6%), and only a mere 21.6% witnessed some improvement. In most cases, displaced persons lost their traditional ways of sustenance through farming and fishing and were compelled into unstable or informal employment. This gradual erosion of income and stability had far-reaching effects on other aspects of well-being that fortified their vulnerability to poverty.

Food security was negatively affected, too; about 50.8% indicated that their access to food had worsened, and 53.1% reported that they had started eating only two meals per day in contrast to before displacement. Limited agricultural productivity in resettlement areas and reduced purchasing power further aggravated hunger and undernutrition, especially in large households.

Regarding health, problems were widespread, with 69.8% experiencing health problems related to the process of being displaced. The most common health problems were waterborne diseases (39.6%) and respiratory infections (28.6%), associated primarily with poor sanitation, overcrowding, and exposure to contaminated water. Some 62.5% complained about emotional stress or depression-another proof that displacement impacts on mental well-being besides physical health.

Concerning physical and environmental security, nearly half of the respondents, i.e., 49%, reported that their new abode was less safe than their original homes. Unless 62.2% enjoyed access to clean water and sanitation, a staggering 37.8% still lacked these basic requirements. This clearly highlights the huge service delivery and infrastructure gaps in resettlement areas.

The data show that climate-induced displacement undermines various dimensions of human security. It disrupts livelihoods, weakens food and health systems, and increases emotional and environmental insecurity. These challenges need integrated support programmes combining livelihood restoration, basic service provision, and psychosocial support for displaced households.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue XI November 2025

Table 2 Response on the implications of climate-induced displacement on human security

Variable	Category	Frequency (n)	Percentage (%)
Income changes due to displacement	Decreased	229	59.6
	Increased	83	21.6
	Remained the same	72	18.7
Access to food changes due to displacement	Worsened	195	50.8
	Remained the same	126	32.8
	Improved	63	16.4
Meals per day compared to before displacement	Less than before displacement	68	17.7
	1	81	21.1
	2	204	53.1
	3 or more	31	8.1
Experienced health issues related to displacement	Yes	268	69.8
	No	116	30.1
Kind of health issues	Waterborne diseases	152	39.6
	Respiratory diseases	110	28.6
	Malnutrition	79	20.8
	Other	43	11.2
Experienced emotional or psychological stress due to displacement	Yes	240	62.5
	No	144	37.5
Perceived environmental safety of new location compared to original place	Less safe	188	49.0
	About the same	101	26.3
	Safer	95	24.7
Access to clean water and sanitation facilities in new location	Yes	239	62.2
	No	145	37.8

Drivers and Patterns of Climate-Induced Displacement

The study shows that flooding (31.5%) and drought (29.4%) were the major climate-related displacement causes in Ghana, followed by coastal erosion (20.6%) and sea level rise (10.9%). This output confirms holidays water-related and drought-related hazards are in the process of causing population movement established under various ecological planning concepts. Most of the displaced persons have been away from their original areas for a period of one to three years (31.2%), showing major recent movements.

Displacement, on the other hand, was largely temporary (61.2%), with most households returning as conditions improved. Still, an interesting number of victims (57.5%) express fear of being displaced again, indicating a continuing vulnerability to recurring climate shocks. Repeated displacement is actually not very common; however, that perception is still high among only 38.8% displacement victims who had been displaced more than once.

Generally, the data show displacement following a cyclic pattern with communities uprooted during severe climatic episodes on their back journeys to stability and rebuilding phase. This cyclic nature points to a strong social and economic attachment of people to their lands and livelihoods but also indicates the fragility of local adaptive capacity in the process. Therefore flood control systems must be strengthened, and arrangements must be made for drought mitigation as well as coastal protection to break this recurring cycle.

Table 3 Response to the Drivers and Patterns of Climate-Induced Displacement

Variable	Category	Frequency (n)	Percentage (%)
Primary reason for displacement	Flooding	121	31.5
	Drought	113	29.4
	Coastal erosion	79	20.6
	Sea-level rise	42	10.9

	Other	29	7.5
Length of years of displacement	1-3 years	120	31.2
	Less than 1 year	109	28.4
	4-6 years	82	21.3
	More than 6 years	73	19.0
Nature of displacement	Temporary	235	61.2
	Permanent	149	38.8
Frequency of displacement (more than once)	No	235	61.2
	Yes	149	38.8
Risk of being displaced again	Yes	221	57.5
	Uncertain	82	21.3
	No	81	21.1

Policy and Support Mechanisms towards Climate-Induced Displacement

Awareness and support mechanisms play a crucial role in addressing the challenges of climate- induced displacement. Findings indicated limited outreach, as 60.4% of respondents were unaware of any government or NGO support programs. Just under half (48.7%) reported receiving some form of assistance, primarily in the form of food supplies (35.4%) and housing (31.0%), while fewer received financial support (21.9%) or healthcare services (5.7%). Perceptions of policy effectiveness were mixed: 48.2% rated policies as moderately effective, 33.6% viewed them as ineffective, and only 18.2% found them very effective (Table 4).

Table 4 Response to the policy awareness and support mechanisms towards climate- induced displacement

Variable	Category	Frequency (n)	Percentage (%)
Aware of any government or NGO support programs	No	232	60.4
	Yes	152	39.6
Received any assistance from government or NGOs since displacement	No	197	51.3
	Yes	187	48.7
Type of assistance received	Food supplies	136	35.4
	Housing	119	31.0
	Financial support	84	21.9
	Other	23	6.0
	Healthcare services	22	5.7
Effectiveness of current policies	Moderately effective	185	48.2
	Not effective	129	33.6
	Very effective	70	18.2

Recommendations for Future Interventions for Climate-Induced Displacement

Respondents recommended several key measures to enhance resilience to climate-induced displacement. Infrastructure development was the top priority (41.4%), followed by climate- resilient agricultural practices (29.7%) and early warning systems (20.0%). Suggested adaptation strategies included sustainable farming practices (25%) and strengthening local infrastructure (20.8%). Additional recommendations involved improving access to climate education (18.7%) and establishing early warning systems (10.4%). Smaller portions of respondents advocated for government financial support (9.6%), water management strategies (7.8%), partnerships with NGOs (4.4%), and community-led adaptation initiatives (3.1%)

Table 5 Suggested recommendations for future interventions for climate-induced displacement

Variable	Category	Frequency (n)	Percentage (%)
	Infrastructure development	159	41.4
Priority to improve community resilience	Climate-resilient agriculture practices	114	29.7
	Early warning systems	77	20.0

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	Access to financial and social support programs	34	8.8
	Implementation of sustainable farming practices	96	25
	Strengthening local infrastructure	80	20.8
Strategies to enhance community adaptation to climate induced displacement	Improved access to climate education	72	18.7
	Establishment of early warning systems	40	10.4
	Government financial support for climate resilience	37	9.6
	Water conservation and management practices	30	7.8
	Partnerships with NGOs	17	4.4
	Community-led climate adaptation initiatives	12	3.1

Qualitative Analysis

The interviews were analyzed using thematic coding, and several key themes emerged related to the socio-economic impacts of displacement, the role of government and non-governmental organizations (NGOs), the challenges in accessing basic services, and the ways communities have adapted to displacement. These themes highlight the lived experiences of displaced individuals in Ghana, providing insight into their ongoing struggles and their recommendations for improving their situation

Socio-Economic Impacts of Climate-Induced Displacement

Climate-induced displacement has come with its severe socio-economic consequences-especially on victims whose livelihood rests on natural resources like land or the sea. Every interview talked about how droughts, floods, and coastal erosion have become recurrent phenomena disrupting the income-generating activities. Farmers and fishermen were cited as the most affected groups. Many farmers and fishermen lost productive assets and tools or boats used for their livelihood and were forced to take unstable low-income jobs. Interviewee 1 an uprooted farmer testified, "Before the drought came, I used to farm and provide for my family... But now, the land is dry, and I can't grow anything anymore. I've had to start looking for small jobs in town, but it's not the same." Similarly, a fisherman said, "The sea was my life... but when the sea took our home, it also took my boat. Now I don't have any equipment, and I'm just doing labour work to survive."

These narratives detail how displacement washes away traditional livelihoods and perpetrates poverty and uncertainty against those affected. More often than not, the sudden loss of productive assets disrupts economic independence and community identity, a theory consistent with that of Nawrotzki et al. (2020) and Ferris (2022), who noted that displaced populations tend to lose their land and water-intensive cultivation or fishing income and are thereby forced into insecure labor activities. This economic disruption increases vulnerability and lessens the choices for adaptation.

Viewed through the Integrated Vulnerability-Political Ecology Framework, the findings show that environmental hazards intersect with social inequalities to determine livelihood outcomes (Adger et al., 2013). Vulnerability views are said to explain ways in which poverty, lack of access to adaptation resources, and poor infrastructure magnify exposure to climatic stressors. Political ecology complements this by showing governance failure, bad land-use management, and unequal resource distribution aggravating the displacement impacts (Benjaminsen et al, 2012; Sagoe-Addy & Appeaning Addo, 2013). Hence, the two perspectives show that the socio-economic effects of displacement in Ghana are not purely environmental but structural, requiring long-term livelihood restoration and equitable resource allocation to break the cycle of vulnerability.

Challenges in Accessing Basic Services

Limited access to essential services, such as water, food, shelter, and healthcare, was found to be among the foremost dimensions of vulnerability affecting displaced populations. The key informant interviews established that displacement brings about an abrupt decline in the living standards of the affected communities. In one respondent's words: "Before the flood, we had everything we needed. We could fetch water from the stream, and

we had enough food from our crops. Now, we are in a new place, and we don't have access to clean water. We have to walk long distances just to find a little water, and it's not even safe to drink." These experiences attest to the fact that displacement means more than the physical uprooting of individuals: it also denies the displaced the ability to fulfill their basic human needs.

Generally speaking, access to health was also very limited. Interviewees cited, for example, long distances to medical facilities and that many could not afford treatment. explained: "When we were in our village, the health clinic was just a short walk away. But now, where we've been moved to, the nearest hospital is far… We have sick people here who can't get the help they need." Such accounts epitomize the overall collapse of human security with the advent of climate-induced displacement as food and water security issues, and lack of adequate medical care come atop social and physical insecurity.

A final point to consider is that, analytically, the findings reported by Campbell et al. (2021) have noted that displaced communities are often confronted with greater public health risks because of limited access to clean water, sanitation, and medical care; Nawrotzki et al. (2020) stress that displacement enhances food insecurity by destroying local food systems and curtailing local agricultural productivity. The interplay of these shortages and risks fortifies an interconnected, multi-dimensional framework of human insecurity, where economic, social, and environmental risks are interwoven.

The Integrated Vulnerability–Political Ecology Framework presents these challenges stemming both from environmental exposure and structural inequality. The vulnerability dimension speaks to the diminished ability to adapt present in victimized populations that (lacking the assets and institutional support to) secure water, health, and nutrition in their new environments (Adger et al., 2015). On the other hand, the political ecology side highlights the systemic governance failures that compound the suffering and reinforce marginalization, such as in the fragmented response to disasters, sub-optimal spatial planning, and inequitable allocation of public services (Benjaminsen et al., 2012; Kelman et al., 2020).

In sum, it appears that climate-induced displacement in Ghana is a governance and equity issue rather than a mere environmental crisis. Delivery of these services requires a comprehensive, multi-level approach to the enhancement of local infrastructure, integration of displaced communities into the public service frameworks, and design of national climate adaptation policy that explicitly considers access to water, health care, and shelter as elemental facets of human security (Warner et al., 2019; Bettini & Nash, 2020).

Role of Government and NGOs in Addressing Climate-Induced Displacement

The study interestingly revealed that both governmental and other agencies play intervention roles but unbalanced ones in addressing the challenges presented by climate-induced displacement in Ghana. Interviews showed that while NGOs were fundamental in providing immediate relief mainly food, shelter, and temporary assistance, their interventions tend to be short term in nature. In striking contrast, government efforts were considered rather poor, as there exist almost no records of long-term planning or sustainable recovery programs towards this challenge. Interviewee 6 lamented, "When we first got displaced, it was the NGOs who came to help us. They gave us food and some supplies to get through the first few weeks. But after that we didn't hear from them anymore. The government didn't do anything to help us rebuild our lives." A second respondent shared the other side of the coin: "We were thankful when the NGOs brought us some food and tents to stay in. But that was months ago, and since then, nothing has changed. The tents are falling apart, and we have no proper homes. The government hasn't stopped in to provide us with any long-term help. It feels like we've forgotten."

The matter shines a spotlight on how short-term humanitarian relief is disconnected from any viable recovery framework. Similar conclusions have been found in other regions vulnerable to climate change, wherein incoherent coordination between state and non-state actors has left displaced populations dependent on inconsistent aid against recurring shocks toward their victims (Warner et al., 2019; Bettini & Nash, 2020). As Kelman et al. (2020) affirm, this worldwide pattern of patchwork emergency measures without integration into a coherent national policy engenders cycles of displacement and extended periods of instability. Ghanaian reality comes into view, highlighting a desperate gap in governance and long-term adaptation planning.

Governance challenges are structural determinants of vulnerability rather than mere administrative shortcomings when viewed through the Integrated Vulnerability–Political Ecology Framework. The vulnerability perspective reveals that displaced populations are constrained by their limited adaptive capacity, which is further exacerbated by weak institutional safety nets and inadequate policy support (Adger et al., 2013). Meanwhile, the political ecology viewpoint places displacement within power relationships and resource inequities wherein decision-making structures often operate for the benefit of the elites in society and away from marginalized groups, while disaster response remains reactive rather than proactive (Benjaminsen et al., 2012). Together, these perspectives reveal that weak institutions and skewed political prioritization sustain vulnerabilities beyond the immediate advent of disasters.

Climate-induced displacement management will require Ghana to strengthen inter-agency coordination among governmental agencies, local governments, and civil society organizations. Development of a well-defined national framework that spells out institutional roles distinctly, links short-term humanitarian relief with long-term adaptation, assures continuity of funding, is paramount. Leaving the issue alone may undermine the local community's resilience; hence, as Garschagen & Romero-Lankao (2021) state, it means "on one hand, structural preparedness, and, on the other hand, governance returns." Therefore, a common approach that highlights planning, protection of equity, and resource distribution to displaced people would substantially take them from dependency status to sustainable recovery and human security.

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

Introduction

The chapter gives an overview of the major findings of the study on climate-induced displacement in Ghana, draws various conclusions based on the objectives, and makes some practical recommendations for policy and community-level interventions. It looked at the key drivers of displacement, socio-economic implications, coping mechanisms embraced by affected populations, and the effectiveness of the policy responses in the Ghanaian context.

Conclusion and Summary of Findings

These were the four major objectives guiding the study.The findings show that the main drivers of climate-induced displacement in Ghana are flooding, drought, and sea-level rise. These extreme events have disrupted livelihoods, especially the farming and fishing communities, who have now had to relocate for survival. As climate variability increases, these forms of displacement have become more frequent and severe opposed to very threatening to the vulnerable population.

The second research found that displacement created an adverse impact on socio-economic development and human security, including income loss, housing instability, limited access to healthcare, education, and sanitation services, along with psychological trauma. Displaced persons have their social networks ruptured and livelihood opportunities reduced, thus exposing them to further vulnerability and deepened poverty.

Again, the study observed how displaced communities mostly seek goodwill from informal coping mechanisms like migration to urban settings, informal jobs, and the support of community and family groups. Such methods provide couples with temporary relief, although still largely unsustainable at present; they thus place the individuals at the risk of exposure to negative conditions and to possible social exploitation.

Due to these considerations, the study showed that policies and institutional responses remain fragmented and reactive. Some government and NGO initiatives exist, but they mainly provide emergency relief with little coordination, funding, or long-term strategy. · Because of this void, Ghana’s mechanism toward addressing climate-induced displacement is crippled.

In essence, the study shall contribute to understanding displacement as a human security problem and not merely as an environmental factor-affected by economic, social, and political factors. The mixed-methods approach provides research in terms of quantitative evidence together with detailed qualitative insights into these displaced people's lived experiences, thereby pointing out structural gaps within Ghana's adaptation and policy regimes.

RECOMMENDATIONS

Based on approaches to tackling the complex problems of displacement due to climate and bolstering community resilience, the following measures are proposed for consideration:

1. Th government should develop a comprehensive national policy framework on climate-induced displacement that incorporates disaster management, climate adaptation, and human security. It should provide a mechanism for inter-agency coordination, funding, and institutional mandates.
2. Revamp socio-economic support mechanisms through livelihood restoration programs, vocational training, and better access to essential services such as healthcare, education, and housing to sustain long-term recovery and integration for displaced communities.
3. Strengthen community adaptation and resilience. This involves establishing early warning systems, providing local climate education, as well as supporting community initiatives that enable residents to anticipate and prevent displacement risks.
4. Public awareness and education must be enhanced on climate risks by integrating climate change adaptation into school curricula and national awareness campaigns to build preparedness and change behaviors at the community level

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