



The Volta Delta: Understanding the Present State of Climate Change, Adaptation and Migration

Introduction

Our study area in the Volta Delta is defined as the administrative districts up to and including the 5m contour above sea-level (Fig. 1). This covers nine (9) coastal districts; South Tongu, Ada East, North

Tongu, Keta Municipal, Ada West, Ketu South, Central Tongu, Ketu North and Ningo Prampram. The delta covers an area of 4553 sq.km characterised by coastal savannah vegetation. The total population

stands at 856,050 (Ghana Housing and Population Census, 2010), with fishing, agriculture and salt production as the main source of livelihoods.

The inhabitants of the delta experience multiple hazards namely coastal erosion, flooding, drought and salinisation. The Volta delta is an area of intense economic activity where threats of habitat fragmentation, unplanned human settlement, saltwater intrusion, siltation and destruction of mangroves are the key challenges in the delta catchment.



Figure 1: DECCMA Study Areas for the Volta Delta

Vulnerability, hazards and climate change hotspot mapping

An assessment of hazards and vulnerabilities within the Volta delta has been conducted. A classification of the total land cover revealed that cropland is the most dominant land cover (44.6%). The second most common land cover is savannah grassland (19.8%), whilst wetland forms about 11.6% of the total. The vulnerability assessment revealed that the risk levels in the study area vary mainly between medium and high risk, with only the water bodies having low risk (Figure 2). The districts at highest risk are concentrated in the western section of the delta, i.e. Ningo-Prampram and Ada districts. These assessments revealed that there is the need to identify and focus on the risk areas for policy and humanitarian activities. A risk profile of the Delta is being developed to augment the vulnerability findings to serve as essential outputs for effective and long-term disaster-risk reduction.

What will happen in the future? Modelling climate change and related impacts, migration and adaptation in the Volta delta

DECCMA Ghana is contributing to the erosion and animal husbandry component of the Integrated Assessment Model being developed. This is aimed at modelling likely changes in environmental risk, migration and adaptation based on climate and socio-economic (including adaptation) policy trajectories.

Migration as an outcome and determinant of vulnerability in the delta

We set out to analyse present migration at the household and delta level. Household surveys together with other participatory research and economic methods were used to analyse the circumstances under which men and women migrate, and how this affects their

vulnerability. To achieve this, we conducted extensive literature reviews, migration analysis using secondary data (e.g. census information for delta level analysis), qualitative fieldwork and questionnaire survey (for household level analysis) among 1364 households in 50 Enumeration Areas (EAs) across the 9 Administrative Districts. The Receiving Area Household Survey of 1400 households has taken place in 50 EAs of the Ashiaman Municipality of the Greater Accra Region. This sprawling urban settlement is a very populous municipality in Ghana and home to many migrant ethnic groups across the country and especially from the delta.

Migration in the Volta delta

Migration is very common in the Volta delta, with over 40% of surveyed households intending to send a migrant in the future. Although more people move out of the delta than into it, the high fertility rate ensures that the total population is not decreasing. 67% of survey respondents are exposed to at least one hazard, with drought being the most prevalent. However, there is no direct relationship between vulnerability to environmental change and migration. Ningo-Prampram, Ada East and West are most vulnerable to physical hazards, but record a lower percentage of people migrating out of the districts. The districts of South Tongu and Keta South, on the other hand, are less vulnerable, but have very high out-migration rates. Over half of the households that cited someone intending to move indicated that this would be an involuntary migration. The proportion of female headed households with migrants is higher than male headed households with migrants. This also implies that more men are migrating out compared to the women.

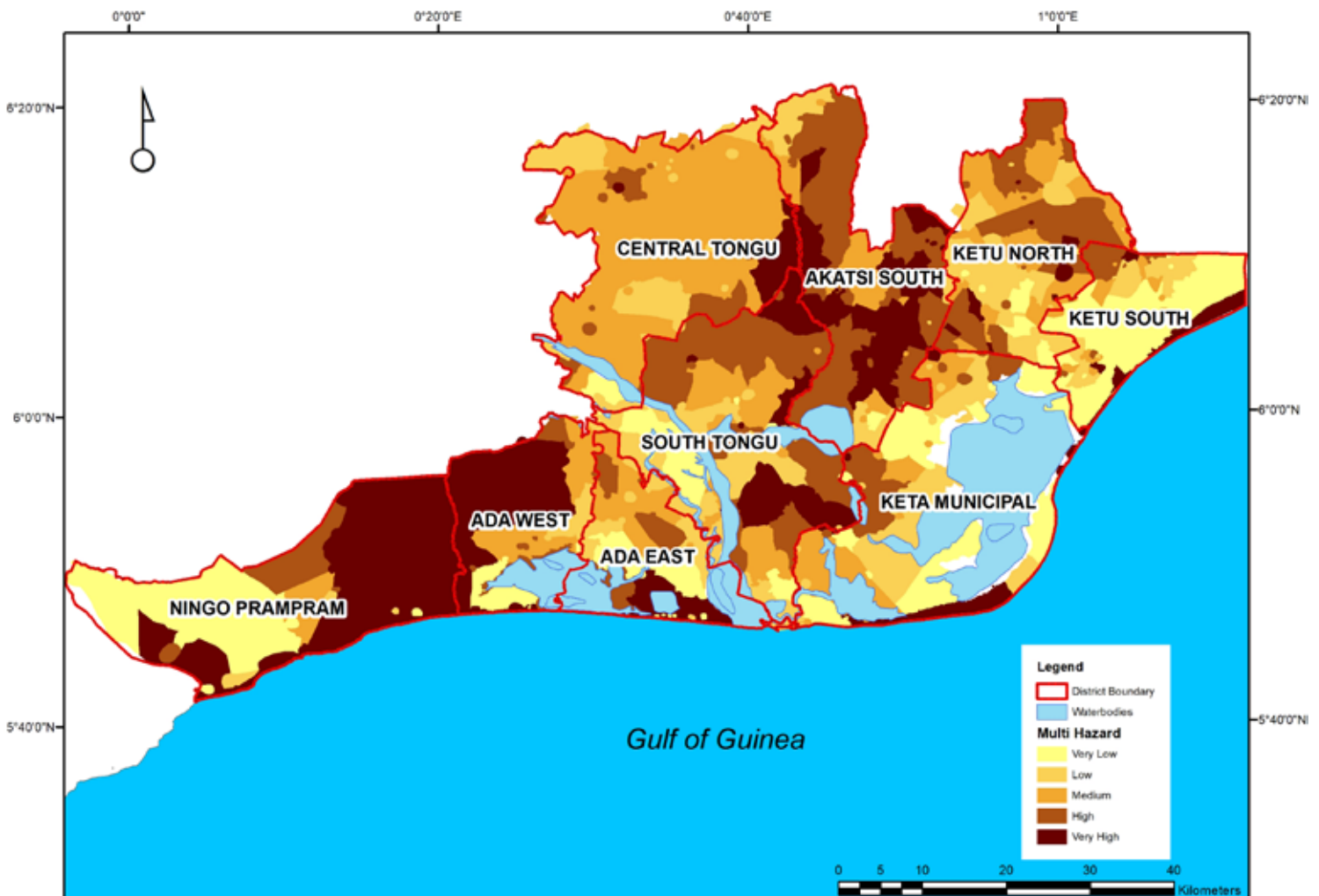


Figure 2: Climate Change hotspots in the Volta Delta

Economy and livelihoods

We set out to examine the socioeconomic context, structure and functioning of the Volta delta. In addition we will develop economic models and tools that will allow policy makers to see how different climate scenarios affect the economic options in the delta regions being studied, and how these in turn affect the vulnerability and sustainability in the deltas.

Input-Output analysis of the socioeconomic context

The proportion of fishing and transport in the delta is higher than the national average, reflecting the fact that the river and coast can be used for both purposes. Key livelihoods in the delta revolve around these sectors as well as salt extraction. Agriculture is predominantly rain-fed inland, while intensive irrigation for all year farming is common in coastal areas such as Anloga (Keta Municipal) and Ada (Ada East). Livelihoods exhibit some gender differences, with men dominating in agriculture, fishing and the construction sub-sectors, whilst women are dominant in the manufacturing and services sub-sectors. The agriculture, fishing and construction sectors are dominated by unskilled male workers. The services and manufacturing sectors, are dominated by skilled women. The embodied work of the skilled and unskilled labour satisfies the delta consumption.

Short-to-medium term socio-economic trends of the delta

An assessment of how local experts envision the socio-economic trends in the delta and the rest of the country by 2030- 2050 is a necessary basis for trying to establish baseline scenarios, and a range of likely futures and pathway scenarios. Population is anticipated to grow in the delta, despite the predominance of out-migration.

Experts in the stakeholder consultations revealed that industrialisation is anticipated to be the main driver of economic growth. This would potentially contribute to reduction in general socio-economic inequality gaps for both the delta and the rest of the country. However, the realisation of these livelihood scenarios hugely depends on the commitment of major stakeholders, particularly government, to policy interventions. These include commitment to gender transformation and equality targets of the SDGs; the 'one district one factory' policy intervention is expected to promote accelerated industrial growth across the country; and the free Senior High School initiative of the government is deemed very positive.

Targeting expertise in stakeholder identification

We have engaged with stakeholders at the community, district and national levels to appreciate the current institutional and governance frameworks and how they shape adaptation to climate change in the Volta delta. During engagements, stakeholders are sensitised and updated on findings from the project. Some relevant findings and outputs of the project are shared, included a drone video of the effects of energetic swell waves, flooding and coastal erosion on the community of Fuvemeh. These engagements have provided the opportunity for stakeholders to also share their views on the barriers to the implementation of policy which was carried out using a survey questionnaire. This helped in defining criteria for successful adaptation.

Engagement with legal practitioners, academics and senior government officials at the national level enhanced participants' understanding of the governance analysis questionnaire and hence respondents were able to provide appropriate responses.

In Ghana, a proactive approach to increase women's participation in stakeholder engagements at the national level has been taken since the participation of women at the district level was relatively low at 22%. When leads are unable to attend themselves, they are invited to nominate a female member of staff. This resulted in a higher proportion of women participation in national level stakeholder engagement (33%)

Appropriate political backing to realise effective adaptation

Many of the substantive human rights needed for effective adaptation are in place in the National Constitution, but a number of them require legal instruments coupled with the lack of a Right to Information Act poses a setback to effective enforcement in practice.

Stakeholder Interests

Generally, districts closest to the coast and the Volta Estuary, such as Ada West, Ada East and Keta, demonstrated rich experiences and high interest in disaster risk issues, with Ningo Prampram being an exception. Even though the district experiences erosion, it has a comparatively low experience and interest in disaster risk.



Climate change adaptation

We set out to identify and assess the scope, types, and sustainability of adaptation options, including migration, as experienced in the Volta delta and across the country as well as the dynamic relationship between national policies and adaptation. To achieve this we conducted an inventory of documented observed adaptations and are in the process of analysing household adaptation to climate change using the household survey data. An assessment of the scope and types of adaptation policy that exist in the Volta delta will form the basis for our understanding of how the government plans to tackle the changing climate. We have also assessed how adaptation interventions have been implemented in accordance with priority themes as outlined in the strategic climate action plan of the government.

Feasible and practical planned adaptations

Inventories of observed adaptations based on literature reviews and national policies affecting adaptation have been developed and were compared to adaptation plans and needs discussed at district and national level stakeholder engagements. The systematic review of national policies, published as a working paper, indicates five key adaptation categories in decreasing order of priority: (i) improved quality and access to information, (ii) increased resilience of built and natural infrastructure, (iii) improved water supply and quality, (iv) promote resilient agricultural systems, and (v) social support for vulnerable groups. National and district level stakeholders also prioritised improved access to information, which includes improved governance and institutional structures, for achieving successful adaptation.

National policies reviewed were updated to include a wider coverage of terminology and linked to four plausible adaptation pathways (minimal intervention, economic capacity expansion, system efficiency enhancement, and system restructuring). Based on a 5-step process, 28 national policies were assessed and showed that most planned adaptation efforts targeted minimal interventions such as planning and legislatives, with some efforts towards economic capacity expansion.

Autonomous adaptation at household level

Despite national programmes to support communities through loans, insurance and cooperatives, less than 20% of households have access to these, and 90% are more interested in assistance provided by NGOs rather than the other forms of support available.

Classifying successful adaptation

An assessment of the criteria for successful adaptation in 50 years' time was integrated into district and national level stakeholder engagements. There were differences between the preferred evaluation criteria at district and national level. District level stakeholders identified improved living standards/livelihoods within income levels and access to basic amenities (water, health, etc.) as successful adaptation. National level stakeholders selected reduced disaster impacts including access to insurance, shelter, etc. (which also ranked 2nd at the district level) as successful adaptations.



Key findings with relevance to policy and practice

Analysis to date shows that good erosion management is a key adaptation measure to secure fishing and farming-based livelihoods in the deltas. When these livelihoods are secure, it is observed there is a reduction in the tendency to migrate. Visual evidence of coastal erosion and flooding (with drone footage) has catalysed political interest in vulnerable coastal settlements and their populations.

Innovative approaches to stakeholder engagement, including a skit, relevant visuals and small groups, have been successful in building collaborative relationships. The DECCMA Ghana National Expert Advisory Group (NEAG) has been inaugurated with the MP for Anlo, Hon Clement Humado as the Chair. Membership has been drawn from the government Ministry, NGO and the Metropolitan, Municipal and District Assemblies (MMDAs) where the project is being implemented.

With the leadership of the NEAG chair, plans are currently underway to convene a formal meeting with the Members of Parliament (the Executive arm of government) as well as the Government Committee on Special Initiatives to present the findings so far from the project and contribute to the Coastal development policy which is currently being finalised.

Concerted efforts to adopt gender-sensitive methodology have increased female representation. Invitation letters requested that, in the absence of the head or lead contact person, a senior female representative be nominated to participate. Female participation at national level was 33%, which was widely deemed higher than it would be, had this approach not been taken.

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