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EXPLORING THE EXPERIENCES OF VICTIMS OF THE AKOSOMBO DAM SPILLAGE: THE CASE OF MEPE IN THE VOLTA REGION OF GHANA

By

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA,

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DECLARATION

I, Confidence Glover, hereby declare that I am the sole author of this thesis titled, "Exploring the Experiences of Victims of the Akosombo Dam Spillage: The Case of Mepe in the Volta Region of Ghana". I affirm that, to the best of my knowledge, this thesis is the result of my own original work. It does not include material published or written by another person, except where acknowledgement has been made. This thesis has not been submitted, either in whole or in part, for the award of any degree or academic qualification at any institution.

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DEDICATION

I dedicate this work to God for His grace and Mercies which has earned me this Master of Philosophy Degree in Social Work. I further dedicate this work to my mother, Mad. Joan Atsufe Agbator, my elder sister, Ms. Eunice Dzidedi Glover and my niece, Calista Edzordzinam Etorwu, for their immense support throughout my academic journey.



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God richly bless you all.

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ABSTRACT

Flooding in Ghana is a recurrent issue in both rural and urban areas, aggravated by human factors, and climate change. In October 2023, the Akosombo Dam spillage led to one of Ghana's most severe floods, affecting thousands of people in the Volta Region, particularly Mepe. Despite previous measures implemented by the Government and Non-Governmental Organisations to address flooding, the issue remains. The aim of the study was to explore the experiences of victims of the Akosombo Dam spillage in Mepe. The objectives of the study were to explore the victim's pre-spillage lives, current living conditions, coping mechanisms, and ways to reduce the impact of future Dam spillages. The Socio-Ecological Systems (SES) theory guided the study. The study employed a qualitative, phenomenological methodology. Data was collected using individual in-depth interviews, focus group discussions, observations, and photovoice. Using purposive sampling, 20 victims, and six key informants were recruited comprising the Assembly Member, two traditional leaders, and officials from National Disaster Management Organisation (NADMO), Social Welfare, and Volta River Authority (VRA). Findings revealed that the spillage disrupted Mepe's economy, which relied on farming and fishing. Inadequate preparedness resulted from lack of understanding of the education on the spillage, underestimation the spillage's impact, and unwillingness of victims to relocate. The flooding destroyed homes, infrastructure, and public services, which led to economic hardship, and the collapse of social and cultural activities. Coping mechanisms included reliance on local support, and external aid. To reduce the impact of future spillages, participants called for better communication, infrastructure, and economic diversification. The study recommends economic recovery programs, improved disaster education, and stronger collaboration between communities, government agencies, and NGOs. Also, implications are discussed for social workers.

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LIST OF ABBREVIATIONS

DSW	Department of Social Welfare
NADMO	National Disaster Management Organisation
VRA	Volta River Authority
SES	Socio-Ecological Systems
WWF	World Wildlife Fund
PTSD	Post-Traumatic Stress Disorder
SGBV	Sexual and Gender-Based Violence
NGOs	Non-Governmental Organisations
FGD	Focus Group Discussion

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Globally, developmental projects are recognised for their potential to transform communities, shaping their socio-economic landscapes, and contributing to their resilience, and well-being (Aboda et al., 2019; Amankona, 2021). These projects vary in focus, but share the goal of promoting community growth, and sustainability. Social development projects that improve education, and healthcare infrastructure enhance human capital, key to long-term prosperity (Siciliano et al., 2018). Economic development initiatives, including job creation, and livelihood support programs, promote financial growth, and stability while reducing poverty. Furthermore, infrastructure projects, such as the development of roads, bridges, and utilities, improve connectivity, and accessibility, facilitating the movement of goods, and people within communities and fostering economic and social integration (Bond & Kirsch, 2015).

Hydroelectric dams are key developmental projects that provide clean, and sustainable energy (Ahmed & Liquin, 2023; Rai et al., 2024). These projects not only offer sustainable energy solutions, but also stimulate economic growth by improving the systems, and processes that manage the movement, storage, and distribution of electricity, thereby creating jobs, and enhancing industrial capacities. Infrastructure development is essential for building the foundational framework that supports broader socio-economic progress (Aboda et al., 2019). An example of such an infrastructure project is the Akosombo Dam, completed in 1965 in the eastern region of Ghana. This dam was designed to improve the country's energy production through hydroelectric power generation (Addo, 2012).

The Akosombo Dam has significantly boosted Ghana's development, contributing over 1,000 megawatts of electricity. Its capacity to generate renewable energy has enhanced industrialisation, improved electricity access, and laid the groundwork for economic growth. However, in October

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2023, the Volta region experienced a catastrophic dam spillage incident, resulting in severe consequences for nearby communities, particularly Mepe (Amoah et al., 2024). Prolonged rainfall, and the opening of the Bagri Dam in Burkina Faso caused the Akosombo Dam to reach its maximum capacity, necessitating the spillage of excess water to prevent collapse. Unlike earlier controlled releases, the October 2023 spillage involved a rapid, and unprecedented discharge of over 183,000 cubic feet of water per second (Amoah et al., 2024), far exceeding past volumes.

The spillage affected more than 100 communities with Mepe, Battor, Sogakope, Sokpoe, Adidome, and Ada suffering the greatest impact (Amoah Dadson, 2023; Coverghana, 2023). This makes it the most widespread in the dam's history. Compounding the disaster was the inadequacy of early warning systems and the lack of timely, actionable information, which left residents unprepared, and increased the scale of devastation (Amoah et al., 2024). The impact of the Akosombo Dam, like that of other dams, is contested in the literature (Ahmed & Liquin, 2023; Siciliano et al., 2018). Aside from disrupting ecosystems, it also adversely affects the social and economic livelihoods of downstream communities (Siciliano et al., 2018). For instance, the Mepe community, located along the Volta River in Ghana's North Tongu District, has long relied on the river's resources.

The people of Mepe have historically depended on farming and fishing as their primary economic activities, with fertile lands and abundant aquatic resources ensuring food security and supporting livelihoods. The Volta River is vital for the community's economic sustenance and cultural identity, playing a crucial role in shaping local traditions and artistic practices. While the dam serves as a sustainable energy source for the nation, it also poses significant challenges to communities downstream.

1.2 Statement of Problem

The Akosombo Dam remains a cornerstone of Ghana's development agenda, yet the unintended consequences continue to disrupt lives in communities that surrounds the Volta river. While the dam

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has contributed significantly to national energy supply, and industrialisation, it has also triggered a cycle of environmental, and socio-economic vulnerabilities through recurrent spillages, and forced displacements (Amankona, 2021; Amoah et al., 2024; Amoah Dadson, 2023; S. Miescher, 2023). While dams have contributed to national energy security and industrial growth, they have also caused ecological disruptions that impact downstream communities both in the short, and long term (Ahmed & Liquin, 2023; Rai et al., 2024; Siciliano et al., 2018). Recurrent dam spillages, and involuntary displacements have created cycles of vulnerability, threatening livelihoods, disrupting social cohesion, and increasing poverty.

Empirical Ghanaian studies indicates that the effects of dam-induced flooding extend beyond immediate physical damage to encompass long-term socio-economic and cultural challenges (Addo & Danso, 2017; Amoako & Inkoom, 2018; Amoateng et al., 2018). According to Addo and Danso (2017), populations displaced by such events often struggle to rebuild their lives, facing barriers to economic re-establishment, and social integration. Amoako and Boamah (2015) argue that the increasing number of flood-related incidents in Ghana underscores the need for a localised understanding of flood-induced vulnerabilities to inform effective policy interventions. Unchecked spillages can lead to land degradation, loss of arable farmland, and declining fish stocks, undermining the livelihoods of residents.

According to Oyira et al. (2019) and Hong et al. (2021), the ecological disruptions caused by dam spillages further exacerbate the socio-economic status of the affected populations. Such environmental changes disproportionately impact vulnerable groups, often trapping them in poverty, and food insecurity. A persistent challenge in managing dam-related disasters is the limited inclusion of affected communities in decision-making processes, and preparedness planning. Often, spillages are executed with minimal consultation or engagement of local populations, resulting in delayed responses, and heightened vulnerability. In the case of Mepe, reports from residents suggest

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that early warning mechanisms were either unclear or poorly disseminated, reducing their ability to evacuate safely or protect property (Coverghana, 2023; S. Miescher, 2023).

This top-down approach to disaster management reflects broader structural weaknesses in institutional coordination, and risk communication, which continue to undermine trust between authorities and local populations (Amoah et al., 2024; Amoah Dadson, 2023). There is limited literature on the lived experiences of victims of the recurring dam spillages, particularly in Mepe where there has been a reoccurrence of dam spillages over the years. Research on dam-related impacts has predominantly focused on urban centers, such as Accra and Kumasi (Amoako et al., 2018; Amoateng et al., 2019), often overlooking rural, and agrarian communities where socio-economic realities and adaptive capacities differ. Despite growing research on the broader impacts of hydroelectric projects in Ghana, the specific experiences of Mepe's residents remain underexplored.

The Mepe community characterised by its reliance on agriculture, and fishing faces disruptions in its economic, and social structure due to recurrent dam spillages. Addressing these gaps requires a shift toward participatory disaster governance that centers on the voices, and needs of those most affected. This study, therefore, explored the experiences of victims of the Akosombo Dam spillage, with Mepe as the community of focus.

1.3 Research Objectives

1. To explore the pre-spillage lives of victims of the Akosombo Dam spillage in Mepe, Volta Region, Ghana.
2. To ascertain the current living conditions of victims, following the Akosombo Dam spillage in Mepe, Volta Region, Ghana.
3. To identify the coping mechanisms utilised by victims in Mepe, Volta Region, Ghana following the Akosombo Dam spillage.

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4. To find out from victims, ways to reduce the impact of future Akosombo Dam spillages on the people of Mepe, Volta Region, Ghana.

1.4 Research Questions

1. What are the pre-spillage living conditions of the victims of the Akosombo Dam spillage in Mepe, Volta Region, Ghana?
2. What are the current living conditions of victims of the Akosombo Dam spillage in Mepe, Volta Region, Ghana?
3. What are the coping mechanisms utilised by victims in Mepe, Volta Region, Ghana following the Akosombo Dam spillage?
4. What strategies can be used to reduce the consequences of future dam spillage on the lives of victims of the Akosombo Dam spillage in Mepe, Volta Region, Ghana?

1.5 Significance of the Study

This study is significant for both local and national policy development in Ghana. At the local level, it provides empirical evidence on the lived experiences of the Mepe community, a population disproportionately affected by the Akosombo Dam spillage. The study highlights community-specific vulnerabilities and capacities, offering insights that can inform locally grounded disaster response and recovery strategies. At the national level, the findings contribute to ongoing policy discussions on disaster preparedness, energy governance, and equitable development. They can guide state institutions such as the National Disaster Management Organisation (NADMO) in strengthening early warning systems, resettlement frameworks, and livelihood recovery programs.

Beyond Ghana, the study feeds into broader debates in sub-Saharan Africa on the social consequences of large-scale hydroelectric projects and climate-related disasters. Many countries in the region rely on dams for energy security, yet communities downstream often face recurrent

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flooding, displacement, and long-term socio-economic disruptions. This research adds to comparative knowledge on community adaptation and disaster risk reduction in the African context.

The study is also valuable to social work and community development practice. Understanding the socio-economic conditions and coping mechanisms of victims equips practitioners to design interventions that are contextually relevant, culturally sensitive, and resilience-oriented. Such insights can strengthen community-based disaster preparedness, enhance recovery initiatives, and promote psychosocial well-being.

Finally, the study contributes to academic discourse by providing context-specific knowledge on disaster-induced displacement and resilience. It lays the foundation for future research in Ghana and the wider region, including longitudinal and comparative studies that track the evolving impact of dam-related disasters. In doing so, it bridges local realities with regional and global conversations on disaster risk reduction, climate adaptation, and sustainable development.

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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This study focused on the lived experiences of victims of the Akosombo dam spillage. This chapter presents a review of existing literature related to the study. The first section reviewed the concept of flooding, followed by a discussion on the pre-disaster lives of people affected by disasters. The third section explored the current living conditions of victims of disasters, while the fourth section examined the coping mechanisms used by the victims of disasters. Finally, the chapter discussed strategies to reduce the impact of future disasters on the victims of disasters. The theory that guided this study was also presented in this chapter.

2.2 Concept of Flooding

Flooding is a major global challenge, threatening numerous regions and posing threats to communities, economies, and the environment (Mensah & Ahadzie, 2020). This phenomenon extends its detrimental impacts over an extended period, lasting days or even weeks (Bunn & Arthington, 2002). Defined by the United Nations (2020) as "a general and temporary condition of partial or complete inundation of normally dry land areas from overflow of inland or tidal waters from the unusual and rapid accumulation or runoff of surface waters from any source", flooding is a complex and dynamic natural occurrence.

According to a study by the World Wildlife Fund (WWF) (2001), many instances of flooding are exacerbated by dam spillages. Spillage, although a necessary measure to prevent the collapse of dams when faced with excess water, often contributes to the escalation of flooding events (Amoah et al., 2024). The diminished volume capacity of the dam, primarily due to siltation resulting from various human activities, is another contributory factor to the increased susceptibility to flooding World Wildlife Fund (2001). Siltation, through sediment accumulation, reduces the dam's ability to

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hold water effectively, amplifying the impact of spillages and aggravating the frequency and intensity of floods (Mosaid et al., 2024).

The construction of dams serves multiple purposes, including electricity generation, provision of portable drinking water, and irrigation for year-round food production to cater for the increasing global population (Lee & Kang, 2020). However, it is essential to acknowledge the unintended consequences associated with dam construction, particularly the risk of catastrophic floods induced by spillage (World Wildlife Fund, 2001). WWF (2001) has documented instances of spillage-induced floods worldwide, underscoring the complex challenges posed by such events. For instance, in September 2000, emergency releases from several dams in Western India's West Bengal led to water surges in four rivers: Damodar, Barakar, Mayurakshi, and Ajoy, resulting in over 1,000 casualties and the destruction of a million homes worth £40 million.

In September 1999, floods in Nigeria along the Niger River were initially attributed to heavy rains. Later, it was discovered that the devastating floods, which destroyed 100,000 hectares of crops, uprooted over 80,000 people, and claimed at least 39 lives, were caused by overflow from the Kainji, Shiroro, and Jebba dams (BBC, 2020). Reports from the United Nations highlighted instances where operators of large dams were compelled to open sluice gates to prevent dam collapse (World Wildlife Fund, 2001). In October 1999, floods in the Mexican state of Hidalgo resulted in a hundred fatalities and left thousands homeless. Notably, water released from the La Esperanza dam contributed significantly to the flooding of two rivers (World Wildlife Fund, 2001). The Akosombo Dam in Ghana has witnessed multiple spillages, with the most recent occurring in October 2023 (S. Miescher, 2023).

This event led to flooding in parts of the Volta region, particularly affecting the community of Mepe. The consequences have been profound, encompassing involuntary displacement, damage to properties and infrastructure, and loss of livelihoods. These global and local instances underscore

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the critical need for a nuanced understanding of the multifaceted impacts of dam spillages. Beyond the immediate physical damage, such events have far-reaching consequences on communities, necessitating comprehensive strategies for prevention, mitigation, and response to minimise the adverse effects on both human and environmental fronts (S. Miescher, 2023).

2.3 Pre-Disaster Lives of Victims of disasters

Understanding the pre-living conditions of victims and communities before flooding events is crucial for comprehending the full impact of such disasters. The state of living in these areas before floods reveals vulnerabilities, potential challenges, and the baseline from which communities are disrupted. In a study on the Akosombo Dam and its impact on the lives of communities in Ghana, Miescher's (2022) work, "A dam for Africa: Akosombo stories from Ghana," offers insights into the historical and cultural dimensions of the region. This exploration serves as a foundation for understanding the socio-economic, cultural, and environmental context in the pre-disaster period, shedding light on the lives of people residing near the Akosombo Dam.

Miescher's (2022) study delves into the fabric of daily existence, capturing the essence of the communities that have historically coexisted with the Akosombo Dam. By presenting "Akosombo stories," the work offers narratives, experiences, and traditions that define the lives of the people before the advent of dam-related disasters. Miescher's findings highlighted dwellers as economically self-sufficient and socially rooted in land and kinship systems. Miescher indicated that the livelihood of communities were primarily based on fishing, farming, and small-scale trading, all closely tied to the Volta River and its seasonal rhythms. The river was not only an economic asset but also a spiritual and cultural symbol that shaped community rituals and identity (Amoah et al., 2024; Miescher, 2022).

Miescher showed that before the dam, these communities operated within a stable system of land tenure and intergenerational knowledge transmission. People cultivated fertile farmlands, harvested

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forest resources, and maintained rich cultural traditions anchored in their local environment. His oral history approach revealed that these pre-disaster societies were not "backward" but functionally adapted to their ecological setting. The study emphasised that the construction of the dam severed these socio-ecological ties and introduced long-term vulnerability by dismantling a way of life that had ensured both sustenance and social cohesion.

Hedidor, Bondinuba, and Sadique (2016) contribute to the discussion on disaster management by highlighting the absence of systematic Spatial Planning (SP) in Mepe, further compounding the difficulties faced by the community. Hedidor et al. (2016) unveil an aspect of Mepe's landscape, which emphasises the lack of systematic Spatial Planning. This absence raises issues related to urban development and amplifies challenges in the wake of dam-related disasters. Unauthorised structures, as pointed out in the study, not only pose hygiene challenges but also become potential obstacles to essential fire escape routes. This dual challenge jeopardises the overall safety of the community and could worsen situations when there is a disaster.

Furthermore, Hedidor et al. (2016) shed light on the historical economic activities that shaped Mepe's identity. The community's reliance on oyster harvesting, fishing, and farming activities unveils not just a way of life but a symbiotic relationship between the residents and their environment. Understanding this historical economic context becomes imperative for assessing the disruptions caused by dam spillages, as these activities may have been significantly impacted, contributing to the economic vulnerability of Mepe.

Akbar (2022) explored the lived experiences of flood survivors in Fazil Pur Town, located in the Rajan Pur District of South Punjab, Pakistan. His study sheds light on aspects of disaster preparedness, community resilience, and the challenges faced by survivors before the occurrence of flood disasters. The study discussed the experiences of survivors, emphasising a notable lack of preparedness and limited access to reliable information within their communities. The absence of

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adequate preparedness measures becomes a focal point, illustrating the vulnerability of the community in the face of impending flood disasters. This observation holds significant implications for disaster management and underscored the importance of proactive measures to enhance community resilience.

Akbar's (2022) study revealed that a lack of information about impending flood disasters lead to confusion and indecision among affected communities. This highlights the importance of effective information dissemination and communication strategies in disaster-prone areas. Without timely and accurate information, communities struggle to make informed decisions and take proactive steps to protect themselves. The experiences shared by flood survivors in Akbar's study emphasised the need for focused efforts to improve disaster preparedness at the community level. Measures such as early warning systems, community education programs, and reliable communication channels are essential to equip residents with the knowledge and tools to respond effectively to flood risks. Additionally, Akbar (2022) added insights to the broader discussion on disaster risk reduction and management, particularly in regions that experience frequent flooding.

Cutter, Boruff, and Shirley (2008) introduced a systematic method for creating a Social Vulnerability Index. This tool helps researchers evaluate a community's vulnerability to disasters before they occur. The approach advocated by Cutter et al. (2008) underscores the significance of evaluating multiple dimensions of vulnerability, including socioeconomic status, access to resources, and community resilience. By adopting a systematic and transparent process, the Social Vulnerability Index allows researchers to explore the factors that render a community susceptible to the impacts of disasters.

This methodological clarity is essential for ensuring the reliability and reproducibility of vulnerability assessments, thereby laying the groundwork for evidence-based decision-making in disaster management. Building upon this foundation, Armah et al. (2010) contributed to the

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discussion by indicating that the financial dynamics of a community has a role to play in measuring their state of livelihood before a flood. The study outlined key factors such as economic activities, sources of income, employment opportunities, social safety nets, financial assets, and infrastructure as key economic indicators to determine the economic activities within the community. Through this, researchers can gain a nuanced understanding of a community's state of livelihood before a flood event by examining these factors.

2.4 Living Conditions of Persons Affected by Disasters

The living conditions of individuals and communities affected by disasters, such as flooding, are often marked by significant long-lasting socio-economic challenges. These conditions are not only shaped by the immediate impact of the disaster itself but are also influenced by the longer-term consequences of displacement, loss of livelihood, and the ongoing struggles of recovery. A growing body of literature has explored the multiple dimensions of post-disaster living conditions, highlighting the psychological, economic, and social dimensions of recovery.

Displaced populations often face difficulties in rebuilding their lives, which can include the destruction of homes, loss of income sources, and challenges in accessing basic services (Addo & Danso, 2017; Amoako & Boamah, 2015). Furthermore, the adaptation strategies of these populations are influenced by the socio-cultural contexts in which they live, often requiring a nuanced understanding of local customs, values, and resilience strategies (Amoateng et al., 2018). In rural Ghana, homes, integral to a sense of security and stability, become casualties in the face of extreme weather events, leaving individuals and families in a vulnerable and uncertain state (Afriyie et al., 2018).

Afriyie, Ganle, and Santos (2018) conducted a study in rural Ghana, investigating the aftermath of extreme weather events, specifically floods, to illuminate the profound and devastating consequences experienced by affected communities. Their research emphasised the immediate and

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enduring impacts on post-disaster living conditions, highlighting the significant loss of homes and essential possessions resulting from these extreme weather events. The disruption of housing emerges as a pivotal factor, contributing to the precarious state of living for flood-affected communities.

Afriyie et al. (2018) found that there are multifaceted challenges that arise in the aftermath of floods, extending beyond the immediate material losses. The displacement from homes according to their study disrupts the social fabric of communities, leading to a state of dislocation and upheaval. Simultaneously, the loss of vital possessions exacerbates the vulnerability of individuals and communities, hindering their ability to resume normal life and recover from the disaster (Alipour et al., 2014). The precarious living conditions resulting from the disruption of housing have cascading effects on various aspects of daily life, including access to necessities, healthcare, and education (Alipour et al., 2014; Amoah et al., 2024).

Afriyie et al. (2018) advocated for holistic and targeted interventions in the post-disaster phase to address the multifaceted challenges faced by victims in rural Ghana. The study also provided insights for policymakers, humanitarian organisations, and community leaders engaged in post-disaster recovery efforts. Understanding the specific consequences of extreme weather events on housing and living conditions enables the formulation of strategies that not only address immediate needs but also contribute to the long-term resilience and well-being of affected communities (Panigrahi & Suar, 2021).

Mendis et al. (2023) discussed the challenges encountered by marginalised communities in the aftermath of disasters through a systematic literature review. Their study focused on children, women, people with disabilities, and older adults, identifying 57 specific challenges across six categories: social, health, political, infrastructure, economic, and communication. The findings revealed that the most pressing issues for these groups include post-traumatic stress disorder

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(PTSD), difficulties in acquiring basic necessities, lack of income-generating opportunities, and heightened risks of sexual and gender-based violence (SGBV).

Notably, PTSD affects most marginalised groups, underscoring the deep psychological impact of disasters. Additionally, the unequal distribution of resources often leaves these communities struggling to meet essential needs, exacerbating their vulnerability (Pongponrat & Ishii, 2018). The lack of income opportunities further compounds economic hardships, while SGBV remains a significant concern, particularly for women (Standing et al., 2016). The review revealed a significant focus on the challenges faced by women, with less attention given to the experiences of children, older adults, and people with disabilities. This imbalance highlights a research gap and underscores the need to better understand and address the specific needs of these groups.

Mendis et al. (2023) further examined the challenges faced by individuals who belong to multiple marginalised groups. Their intersectional approach shows that those experiencing multiple forms of marginalisation face compounded difficulties, adding complexity to disaster response and recovery efforts. The study's categorisation of challenges and emphasis on intersectionality offer a nuanced understanding of the difficulties faced by marginalised communities. This comprehensive view is essential for developing targeted and effective disaster response strategies. By highlighting common challenges and specific needs, Mendis et al.'s work provides valuable insights for policymakers and practitioners. Their findings advocate for more inclusive and equitable disaster management practices, ensuring that support systems address the diverse and intersecting needs of all marginalised groups.

Adegoke et al. (2019) highlighted the compromised living conditions that ensue in the aftermath of flood events, with floodwater infiltrating homes, causing infrastructure damage, and fostering unsanitary conditions. The resultant lack of access to clean water becomes a pressing concern, further escalating health risks. The study further indicated the precarious health landscape that

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emerges after floods. Compromised living conditions and contaminated water converge, creates an environment conducive to the spread of waterborne diseases. The proliferation of waterborne diseases stands out as a significant health consequence for post-flood communities (Adegoke et al., 2019). Contaminants carried by floodwater introduce pathogens and pollutants into water sources, compromising the safety of drinking water and contributing to the rise of diseases. The study emphasised the urgent need for targeted public health interventions in post-flood scenarios to mitigate the health risks posed by contaminated water sources. This underscores the importance of comprehensive measures encompassing clean water provision, sanitation efforts, and health education to safeguard the well-being of residents in the aftermath of flooding events

Addo and Danso (2017) investigated the intricate sociocultural factors and perceptions associated with the voluntary and permanent relocation of flood victims, providing valuable insights into the nuanced dynamics unfolding in the aftermath of such disasters. The study brought to light the profound impact of displacement, extending beyond the physical realm, as it strains social networks, disrupts community cohesion, and challenges established support systems. A primary focus illuminated by Addo and Danso's research is the strain on social networks induced by displacement. The displacement of individuals and families from their homes introduces significant challenges to the traditional bonds and connections within a community (Aboda et al., 2019). The rupture of these familiar social ties, integral to the fabric of daily life, contributes to the emotional and psychological toll on residents grappling with the aftermath of floods (Dai et al., 2017). The upheaval of social networks becomes a notable challenge in the post-flood period as individuals navigate the complexities of rebuilding and sustaining interpersonal connections in unfamiliar environments (Alipour et al., 2014).

Additionally, the study emphasised the disruption of community cohesion as a critical consequence of voluntary and permanent relocation. Established norms, shared experiences, and communal bonds are often tested or fractured, creating a sense of dislocation among residents (Ntontis et al.,

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2020). The challenges of rebuilding social structures become pronounced as individuals strive to reconcile familiar elements of community life with the new dynamics introduced by relocation (Carroll et al., 2009). This disruption adds layers of complexity to the post-flood state of living, as communities endeavor to establish a renewed sense of unity and identity amid the challenges brought about by the relocation process (Carroll et al., 2009; Ntontis et al., 2020).

However, contrasting perspectives exist on how such disruptions unfold. While some studies highlight relocation as primarily destructive to social ties and cohesion (Addo & Danso, 2017; Ntontis et al., 2020), others argue that displacement can also foster new forms of solidarity and adaptive networks, particularly when communities draw upon shared cultural practices of mutual aid (Carroll et al., 2009). This tension points to the importance of applying the Social-Ecological Systems (SES) theory, which frames resilience not only as the capacity to return to a pre-disaster state but also as the ability to reorganise social and ecological relations in adaptive ways. In this regard, the Ghanaian context, where communal values such as abiriwatia (extended kinship obligations) are strong, may demonstrate both vulnerabilities and opportunities for resilience. While cultural obligations can overstretch households during crises, they may also provide an important safety net that supports recovery. This dual character reflects a gap in existing disaster literature, which often underemphasises the cultural layer of SES in African contexts.

2.5 Coping Mechanisms Utilised by Persons Affected by Disasters

In the aftermath of disasters, victims often rely on diverse coping mechanisms to navigate the profound challenges they face. A study conducted by Thieken et al. (2007) in Germany sheds light on the role of social support networks as fundamental coping mechanisms in the wake of floods. The study emphasised the significance of family, friends, and community groups in providing both emotional and instrumental support to disaster victims. Participants in the study highlighted the importance of emotional support, offering a sense of comfort and understanding, while instrumental support, such as shelter and food, addressed immediate material needs. These coping mechanisms

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played a crucial role in rebuilding relationships and fostering resilience among victims as they worked to overcome the aftermath of the disaster (Thieken et al., 2007).

Twigg's (2007) study in India contributes to the understanding of coping mechanisms by emphasising the active use of cognitive strategies to manage the stress and anxiety associated with flood experiences. Participants in this study reported the adoption of cognitive reframing as a prevalent coping strategy. This involves the reinterpretation of negative events in a more positive light, allowing individuals to find meaning and hope amid adversity. Positive thinking, focusing on optimistic perspectives and future outcomes, emerged as another cognitive coping mechanism employed by participants (Twigg, 2007). Additionally, adaptive problem-solving, a cognitive strategy aimed at addressing challenges and finding practical solutions, plays a crucial role in enhancing individuals' resilience in the face of flood-induced stress (Panigrahi & Suar, 2021).

Wang et al. (2017) also emphasised the integral role of active community engagement and solidarity in the coping process for individuals affected by floods. The research revealed that collective efforts, such as communal clean-up activities and shared rebuilding initiatives, not only addressed practical challenges posed by floods but also fostered a profound sense of unity and empowerment among the affected community members. This communal approach to coping underscores the importance of social cohesion and mutual support in navigating the aftermath of disasters (Carroll et al., 2009). The collaborative endeavors not only contribute to the physical recovery of the community but also enhance the psychological well-being of individuals as they actively participate in rebuilding their lives together (Wang et al., 2017).

Contextually, Armah et al. (2010) conducted a study in Ghana that brought to bear the local coping strategies employed by flood-affected communities. The findings highlight a diverse range of coping mechanisms, including the roofing of thatch houses for money, engaging in fishing, weeding the farms of others in exchange for food, trading and selling in nearby townships, obtaining loans

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from social contacts, selling of livestock, premature harvesting of crops, engaging in weaving and basketry, depending on food from previous crop seasons, and even resettlement in other towns. The study underscored the resourcefulness and adaptability of communities in the face of flood-induced challenges. Importantly, social capital emerged as a critical factor in adaptation, with respondents receiving remittances from relatives living outside the flood zone and various organisations providing relief items to the flood victims (Armah et al., 2010). The social networks and support systems thus play a crucial role in facilitating coping strategies and resilience-building (Bond & Kirsch, 2015).

Addo and Danso (2017) further examined the formal and informal networks that emerge in response to the disasters. The study is crucial for understanding how these networks provide support to displaced communities. The research highlights that formal networks, including government agencies and NGOs, play a critical role in coordinating and delivering assistance during and after displacement events. These networks often provide essential services such as housing, financial aid, and medical care, which are vital for the affected populations (Bakic & and Ajdukovic, 2021).

On the other hand, informal networks such as community groups, family ties, and local organisations are also pivotal (Carroll et al., 2009). These informal networks often provide immediate and culturally relevant support, such as emotional assistance and practical help with relocation and adaptation. Understanding the interplay between formal and informal networks helps gauge the effectiveness of existing support structures in Mepe. It reveals how these networks address the needs of displaced individuals and communities, and highlights areas where additional support may be required (Bakic & and Ajdukovic, 2021). Addo and Danso's study underscores the importance of leveraging both types of networks to enhance disaster response and recovery, ensuring that displaced populations receive comprehensive and effective assistance.

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Antwi-Agyei et al. (2018) also explored adaptation opportunities and maladaptive outcomes in climate vulnerability hotspots, providing valuable insights into how communities navigate environmental challenges. Their study highlighted the dual nature of adaptation strategies: while some interventions help communities cope with climate impacts, others may inadvertently exacerbate vulnerabilities. Antwi-Agyei et al. (2018) focused on the mechanisms that communities employ to adapt to environmental changes, such as implementing new agricultural practices, diversifying livelihoods, or improving infrastructure. These adaptation strategies were crucial for enhancing resilience in areas most affected by climate variability and extremes.

In addition, Antwi-Agyei et al. (2018) shed light on maladaptive outcomes; situations where adaptation efforts, rather than mitigating risks, lead to unintended negative consequences. For instance, they discussed that the introduction of certain flood control measures might inadvertently lead to increased risk elsewhere, or new agricultural practices could result in environmental degradation (Antwi-Agyei et al., 2018). Understanding both adaptation opportunities and maladaptive outcomes is essential for designing effective climate resilience strategies. Antwi-Agyei et al.'s work emphasises the need for comprehensive approaches that not only promote beneficial adaptations but also anticipate and address potential negative effects. This holistic view is crucial for ensuring that adaptation efforts lead to sustainable and equitable outcomes, particularly in climate vulnerability hotspots where the stakes are high.

Addo and Danso (2017) in their study introduced the idea of using drones for coastal flood monitoring, showcasing an innovative technological approach to disaster management. Their study highlighted how drones can enhance flood monitoring by providing real-time data, improving the accuracy of flood predictions, and facilitating more effective response strategies. The application of drones represents a significant advancement in flood management technology (Munawar et al., 2021). Drones can capture high-resolution images and collect data from areas that are otherwise difficult to access, offering detailed insights into flood extents and impacts (Iqbal et al., 2023). This

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technological capability supports more precise and timely interventions, which is particularly valuable in coastal areas prone to flooding. Addo et al. (2017) emphasise that integrating drones into flood monitoring systems can enhance the overall effectiveness of disaster management.

By providing real-time information, drones enable quicker and more informed decision-making, which can improve both emergency response and long-term recovery efforts (Iqbal et al., 2023). Their work underscored the potential of technological innovations to address complex challenges in flood management and to support more resilient communities (Munawar et al., 2021). These insights collectively emphasise the interconnectedness of coping mechanisms, community engagement, and social support in disaster recovery. Addo and Danso's (2017) study highlighted that not only do individuals draw strength from their social networks, but the collective efforts of communities contributed significantly to the overall coping process. Understanding and harnessing resilience within communities, both in terms of collective action and individual coping strategies, are essential aspects of fostering effective disaster recovery and building long-term resilience among affected populations.

Notwithstanding, the coping strategies documented in different contexts reveal both convergences and tensions. While studies from Europe and Asia (Thieken et al., 2007; Twigg, 2007; Wang et al., 2017) stress psychological and community-level strategies, African-based studies (Armah et al., 2010; Antwi-Agyei et al., 2018) highlight the centrality of livelihood-based and resource-driven mechanisms. This contrast suggests that coping cannot be generalised but must be situated within socio-ecological realities. The SES theory provides a useful lens here, since it conceptualises communities as interconnected systems of people, institutions, and environments. Coping strategies that appear adaptive in one ecological context may be maladaptive in another, depending on the balance between ecological limits and social networks. For instance, premature harvesting of crops may secure short-term survival but undermine long-term agricultural resilience. Such findings

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highlight the importance of tailoring disaster interventions to specific socio-ecological contexts, rather than transferring "best practices" across settings uncritically.

2.6 Strategies to Reduce Consequences of Future Disasters on Persons Affected

The effectiveness of disaster management and recovery efforts significantly depends on the strategies employed to reduce the impact of future disasters on vulnerable populations. In the case of communities affected by dam-induced flooding, the strategies must be multi-faceted and long-term. These strategies can range from structural interventions, like improving infrastructure and flood control systems, to community-based initiatives focused on preparedness, resilience, and recovery.

Abeka et al. (2020) conducted a study in Ghana and indicated the importance of effective collaboration among local governments, non-governmental organisations (NGOs), and community-based organisations in mitigating the consequences of future disasters. The research revealed that a coordinated effort between these entities is essential for the timely and targeted provision of aid and resources to individuals affected by disasters. This collaborative approach enhances the efficiency and effectiveness of disaster response, ensuring that assistance reaches those in need promptly. The study emphasised the necessity of building and maintaining strong partnerships between different stakeholders involved in disaster management, fostering a synergistic response to the challenges posed by disasters.

Amoako et al. (2019) delved into the vital significance of community involvement in decision-making processes related to flood management. The findings from this study advocated for a more inclusive and community-driven approach to shape policies and strategies aimed at mitigating the impact of floods. The research emphasised the essential nature of this involvement in developing effective, context-specific flood management interventions that align with the needs and perspectives of the communities affected. Amoako et al. (2019) also underscored the value of local

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knowledge and community insights as crucial assets in crafting flood management strategies. By actively engaging community members in decision-making processes, policymakers and planners gain access to a wealth of contextual understanding and practical wisdom. This inclusive approach ensures that flood management interventions are not only technically sound but also culturally and socially sensitive to the specific dynamics of the communities they aim to serve (Klijn et al., 2021).

Additionally, Amoako and Inkoom (2018) advocated for long-term strategies that focus on sustainable housing solutions to reduce the impact of future disasters on affected individuals. This approach involves incorporating community input and local knowledge in the planning and implementation of housing initiatives. By actively involving the affected communities in the decision-making process, long-term strategies can address the specific needs and vulnerabilities of the population (Klijn et al., 2021). Sustainable housing solutions not only provide physical resilience against disasters but also contribute to the overall well-being and stability of the affected communities (Kundzewicz, 2002). Incorporating local knowledge ensures that interventions are culturally sensitive and attuned to the unique characteristics of the community, fostering a sense of ownership and sustainable development (Klijn et al., 2021).

Yang, Li, Lu, and Peng (2023) examined the effectiveness of post-disaster recovery strategies. The study focused on the role of financial, institutional, human, and natural capital in enhancing the resilience and sustainability of relocated rural communities. The study identified a gap in existing recovery policies, which often prioritise government-driven financial support and institutional involvement while overlooking the importance of fostering community self-reliance. This reliance on external aid can limit long-term sustainability, as it may prevent communities from developing their own adaptive capacities.

Yang, Li, Lu, and Peng (2023) also highlighted the varying impacts of tangible and intangible assets on disaster recovery. Tangible assets, such as financial resources and infrastructure, contributed

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positively to preparedness and confidence in recovery. However, intangible assets, such as social capital and community trust, can have mixed outcomes and sometimes intensify concerns about future disasters (Carroll et al., 2009). Additionally, while financial and socio-political capital benefit recovery efforts, the misalignment of human capital and livelihood strategies with community needs can have adverse effects (Panigrahi & Suar, 2021). Yang et al. (2023) further advocated for more balanced recovery policies that integrate tangible and intangible resources, emphasising the need for strategies that provide financial aid while also fostering self-reliance and social cohesion. Tailoring recovery efforts to the unique context of each community and focusing on long-term sustainability are essential for effective outcomes (Dai et al., 2017).

Similarly, Herlianto (2024) investigated early recovery strategies in Indonesia and identified a significant gap in their implementation. Using the Miles and Huberman Interactive Analysis Model (1992), the study found out that post-disaster recovery efforts in Indonesia lack a comprehensive legal framework. Current strategies primarily focused on physical reconstruction, such as providing shelters for those affected, while neglecting psychological and social recovery (Herlianto, 2024). This narrow approach leaves critical aspects of humanitarian recovery, such as addressing trauma and mental health needs, unaddressed. Herlianto (2024) calls for a more integrated approach to disaster recovery that balances physical rebuilding with mental health support and social services. Including psychological care and community support in recovery plans is essential to address the broader needs of disaster survivors.

Herlianto (2024) further emphasised that while restoring physical infrastructure is important, equal attention must be given to addressing psychological trauma and establishing broader support systems to ensure a comprehensive and effective recovery process. Furthermore, community involvement nurtures a sense of ownership and empowerment among residents (Ntontis et al., 2020). Active participation in decision-making transforms communities into stakeholders in the process, fostering a collaborative relationship with authorities and organisations involved in flood

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management. This collaborative approach enhances the overall effectiveness and sustainability of flood management strategies, co-created with the communities and tailored to address their unique challenges, priorities, and aspirations (Bakic & and Ajdukovic, 2021). Lastly, Herlianto (2024) advocated for a shift from top-down approaches to a more bottom-up and participatory model, where the voices of community members are heard and integrated into decision-making processes. This approach not only bolsters the resilience of communities in the face of floods but also cultivated a sense of community cohesion and shared responsibility.

Taken together, the reviewed studies point to two contrasting orientations in disaster management strategies. On one hand, some scholars emphasise institutionally coordinated strategies, where the focus lies on efficiency, resource mobilisation, and governance structures. Abeka et al. (2020) and Yang et al. (2023) illustrate this perspective by showing how institutional collaboration and financial or infrastructural support can significantly improve the speed and reach of disaster responses. These approaches rely on the capacity of governments, NGOs, and formal organisations to deliver aid and enforce policy. On the other hand, other scholars highlight the importance of community-driven strategies that prioritise participation, ownership, and psychosocial well-being. Studies by Amoako et al. (2019), Amoako and Inkoom (2018), and Herlianto (2024) argue that interventions are most effective when they engage local knowledge, address long-term housing and livelihood needs, and include psychosocial recovery. This orientation stresses that resilience is not just about rebuilding physical structures but also about strengthening community cohesion, mental health, and cultural sensitivity.

2.7 Theoretical Perspective: Socio-Ecological Systems Theory by Elinor Ostrom

The Socio-Ecological Systems (SES) theory, rooted in ecological and social sciences, provides a robust perspective for understanding the complex interactions between human communities and their surrounding ecosystems. Developed in 1988 by Elinor Ostrom and others, this theory emphasises the interconnectedness of social and ecological components within a system. In the

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context of the study on the lives of victims of the Akosombo Dam spillage in Mepe, Volta Region, Ghana, the SES theory serves as a foundational perspective to analyse the intricate dynamics shaping the community's resilience and adaptation. However, critics such as Folke et al. (2005) and Cote & Nightingale (2012) argue that SES, while integrative, can sometimes downplay issues of power, inequality, and politics. In contrast, frameworks such as Political Ecology foreground these dynamics, suggesting that environmental disasters cannot be fully understood without examining how social hierarchies, resource access, and institutional biases shape vulnerability.

2.7.1 Social Dimension

The social dimension of the SES theory directs attention to the human aspects of the system, including community structures, cultural practices, and governance mechanisms. In Mepe, the pre-spillage socio-cultural context, disrupted by the dam construction, influences the community's adaptive capacity. This dimension considers the social networks and support systems utilised by victims to cope with the aftermath of the spillage. By employing qualitative research methods (Braun & Clarke, 2006) and phenomenological approaches (Moustakas, 1994), the study aims to uncover the nuanced social dynamics at play, exploring how cultural resilience and community ties contribute to the adaptive strategies employed by the victims. Still, SES perspectives often emphasise "resilience" as inherently positive, yet critics argue that strong social ties can also reinforce exclusion or fatalism (Adger, 2000). For example, some Ghanaian studies on flooding (Amoako & Inkoom, 2018) show that community solidarity sometimes delays migration or adaptation, demonstrating both enabling and constraining effects of social capital.

2.7.2 Ecological Dimension

The ecological dimension of the SES theory focuses on the environmental aspects of the system. In the case of Mepe, the dam spillage has ecological implications, affecting the local ecosystem and natural resources. This dimension encompasses the environmental vulnerabilities created by the spillage, including changes in land use, water quality, and biodiversity. By integrating drone

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technology for flood monitoring (Addo et al., 2018) and drawing on concepts from regional climate change studies (Adegoke et al., 2019), the research seeks to understand the ecological disruptions caused by the Akosombo Dam and their implications for the adaptive strategies and well-being of the community. Yet, some scholars caution that ecological framings can become overly technical, privileging hydrological and climate models over lived experience (Wisner et al., 2004). The Pressure and Release (PAR) model, for instance, highlights root causes such as land tenure insecurity or weak regulatory oversight, which SES alone might not sufficiently capture. This suggests that SES must be complemented with vulnerability frameworks to fully explain how ecological shocks translate into human suffering.

2.7.3 Governance and Institutions:

The SES theory highlights the role of governance structures and institutions in shaping the dynamics of social-ecological systems. The study will explore the governance mechanisms in place in Mepe, examining the effectiveness of local institutions in managing the impacts of the Akosombo Dam spillage. This includes an analysis of policy frameworks, disaster management organisations, and community-based initiatives (Aggrey, 2015; Cutter et al., 2008). Understanding the governance dimension is crucial for identifying gaps and proposing recommendations to enhance the adaptive capacity of the community.

2.7.4 Adaptive Capacity:

At the core of the SES theory is the concept of adaptive capacity, reflecting the ability of a system to respond and adapt to changes. The study will employ this lens to assess the adaptive strategies employed by the victims of the Akosombo Dam spillage in Mepe. By exploring the pre-spillage conditions, current living conditions, and support systems, the research aims to identify factors contributing to or hindering the community's adaptive capacity. This analysis provides a foundation for proposing strategies to enhance resilience and improve the lives of the affected population.

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In essence, the Socio-Ecological Systems theory serves as a comprehensive and integrative framework for understanding the multidimensional impact of the Akosombo Dam spillage on the lives of Mepe's residents.

2.8 Application of Theory to the Study

In applying the Socio-Ecological Systems (SES) theory to this study, the researcher was able to examine the interconnectedness of social, ecological, governance, and adaptive dimensions, providing valuable insights for both theoretical understanding and practical interventions in the aftermath of large-scale hydroelectric projects like the Akosombo Dam spillage. The social dimension of the theory enabled the researcher to examine the community's networks, relationships, and behaviours, revealing the psychological and social effects of the spillage on the people of Mepe. This analysis provided insights into how social bonds and interactions were disrupted or strengthened in response to the disaster.

The ecological dimension offered a view of how the spillage impacted the local environment, particularly through disruptions to farming, fishing, and housing. It highlighted the direct effects of the flood on livelihoods and essential activities that supported the community. The governance and institutions dimension allowed the researcher to evaluate the role of local institutions, including the district assembly, churches, NGOs, and community groups. It demonstrated how these organisations supported response efforts by providing shelter, food, and other necessities to those affected, emphasising the critical role of institutional support in disaster management.

The adaptive capacity dimension allowed the researcher to explore the strategies employed by the community to cope with and recover from the spillage. This included community support networks, recovery plans, resettlement initiatives, disaster preparedness efforts, and physical measures such as the construction of flood barriers, illustrating the resilience and resourcefulness of the community in adapting to such challenges.

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2.9 Usefulness of the Theory

The SES (Social-Ecological Systems) theory provided a valuable perspective for understanding the complex dynamics affecting the victims of the Akosombo Dam spillage. It highlighted the interconnectedness between social and ecological systems, offering insights into how these interactions influence the lives and livelihoods of the affected communities. The theory also emphasised the critical role of governance in addressing the challenges faced by these communities.

By applying the SES theory, the researcher was able to analyse the spillage's impacts systematically and identify practical strategies for improving the lives of the victims. This included examining how social relationships, environmental changes, and institutional responses shaped the recovery process. Overall, the SES theory offered meaningful insights that can help address the challenges experienced by the people and communities impacted by the Akosombo Dam spillage, guiding efforts toward more effective and sustainable solutions.

2.10 Conclusion

This chapter reviewed existing literature on the lived experiences of victims of disasters. The existing studies highlighted the concept of flooding, the pre-disaster lives of victims and the current living conditions of victims of disasters. The literature also presented the coping mechanisms used by persons affected by disasters and the strategies to reduce the consequences of future disasters. The chapter also highlighted the theoretical perspective underpinning the study.

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CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter delineates the research methodology used to explore the lives of victims of the Akosombo Dam spillage in Mepe, Volta Region, Ghana. It provides an overview of the research design, data collection methods, and analytical techniques utilised in this study. The chapter aims to outline the systematic approach taken to address the research questions and objectives. This chapter sets the stage for understanding how the empirical data was gathered, analysed, and interpreted.

3.2 Research Design

This study used a qualitative research design, specifically a phenomenological approach. Qualitative research was well-suited for exploring the lived experiences, perceptions, and coping strategies of individuals and communities (Creswell, 2013), making it appropriate for exploring the lives of victims of the Akosombo Dam spillage. The phenomenological approach was ideal for delving into the depth of meaning and subjective interpretations of the participants' experiences (Moustakas, 1994). Phenomenology allowed for uncovering the essence of participants' experiences and gaining a rich understanding of their perspectives (Manen, 2023).

3.3 Study Area

The study area for this research was Mepe. Mepe is a community situated in the North Tongu District of Volta Region in the Republic of Ghana. Mepe is located along the banks of the Volta River, which plays a crucial role in the local economy and cultural practices. The community's geographical setting and its proximity to the Akosombo Dam made it particularly relevant for this study, as it has been significantly impacted by the dam's construction and the subsequent flooding.

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The Akosombo Dam, constructed in the 1960s, created Lake Volta, one of the world's largest artificial lakes. The dam was a pivotal project for Ghana's energy sector, providing hydroelectric power that contributed to national development. However, the creation of Lake Volta led to the displacement of numerous communities, including Mepe, which was directly affected by the flooding caused by the dam. The resulting changes in the landscape, coupled with the socio-cultural disruptions, have had lasting effects on the residents of Mepe.

Mepe's traditional reliance on the Volta River for its economic activities, including fishing and agriculture, and its deep cultural connections to the river, have been profoundly altered. The community's way of life was closely tied to the river's resources and rhythms, making the displacement and the changes in their environment particularly challenging. This study explored these impacts, focusing on how the community adapted and coped with the alterations to their environment and livelihood.

3.4 Target Population

The target population for a study refers to the whole set of units for which the study data is to be used to make conjectures (Lavrakas, 2008). The target population of this study consisted of persons in Mepe who were affected by the spillage of the Akosombo Dam and individuals who work directly with Mepe.

3.5 Study Population

Study population refers to the subset of the target population available for study (Banerjee & Chaudhury, 2010). The study population consisted of individuals aged 18 years and above who had been affected by the spillage of the Akosombo Dam in Mepe. The participants included victims of the spillage and key informants who had insights into the community's experiences and responses.

The key informants included in the study were the Assembly member of Mepe, two traditional leaders, and an official each from National Disaster Management Organisation (NADMO),

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Department of Social Welfare (DSW) and Volta River Authority (VRA). The researcher involved these different key informants to develop an understanding of the phenomenon under study and to ensure triangulation.

3.6 Sampling Techniques and Recruitment of Participants

Participants were sampled using a purposive sampling technique, aiming to include individuals who had been affected by the Akosombo Dam spillage in Mepe and were willing to share their experiences. The sample was designed to be diverse in terms of gender, age, and occupation to capture a broad range of perspectives (Creswell, 2013). Key informants were included for their roles and relevance to the community.

To recruit participants for the study, the researcher collaborated with the Assemblyman of Mepe, who announced the study to community members. Interested individuals were invited to meet the researcher at the Presbyterian Church of Ghana, Mepe. During this meeting, the researcher conducted preliminary discussions with potential participants to confirm their eligibility. The study's purpose and scope were then thoroughly explained to eligible individuals. Informed consent was obtained from all participants before their inclusion in the research.

In recruiting key informants, the study used a purposive sampling technique. The researcher purposively recruited key informants who work directly with the Mepe Community. The researcher initially met key informants at their various workplaces and explained the scope of the study to them. The researcher then served all Key informants with a letter from the Department of Social work of the University of Ghana informing them about the researcher and the study. In line with Creswell's (2013) recommendation of purposively selecting participants based on their unique characteristics, roles, knowledge and experiences that are particularly relevant to the study, the key informants included the Assembly member of Mepe, two traditional leaders, an official each from NADMO, Social Welfare and VRA.

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3.7 Sample size

The sample size for the study was 26 participants. According to the guidelines by Guest, Bunce, & Johnson (2006), sample sizes are virtually nonexistent in qualitative research and this assertion is based on the concept of saturation. Participants consisted of 20 victims of the Akosombo Dam spillage and six key informants including the Assembly member of Mepe, two traditional leaders, an official each from NADMO, Social Welfare and VRA.

The 26 participants comprised 13 females and 13 males to ensure a gender sensitive research. Adopting a gender-sensitive approach meant recognising and analysing both the differences and similarities in men's and women's experiences and perspectives, while assigning equal importance to each (Leduc, 2009). The selection aimed to include a balanced representation, and to capture a diverse range of perspectives.

3.8 Inclusion Criteria

Eligible participants were individuals aged 18 years and above who had been directly affected by the Akosombo Dam spillage in Mepe. Residency within the Mepe community at the time of the study was also required, ensuring that participants could provide firsthand accounts of the spillage's impact. Additionally, participants needed access to a smartphone to facilitate aspects of data collection or communication as necessary.

3.9 Exclusion Criteria

Individuals below the age of 18 and those who did not experience direct consequences of the dam spillage were excluded from the study. Individuals who did not have access to a smart phone and were residing outside the geographical boundaries of Mepe were excluded from participation in this study.

The key informants for this study included the Assembly member for Mepe, two representatives from the traditional council, a social worker, a VRA officer, and a NADMO officer. While some of

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these individuals were residents of Mepe, others were non-residents. Regardless of their residency status, their roles were directly connected to the people of Mepe, either through their professional responsibilities or their positions within the community.

3.10 Data collection

The study utilised multi methods to gather comprehensive qualitative data. Individual In-depth interviews, focus group discussions, observations, document analysis, and photovoice were employed to capture participants' experiences and perspectives. These methods allowed participants to describe their living conditions before the Akosombo Dam spillage, discuss their current situations, and explain their survival strategies and the interventions they believe could improve their livelihoods. This approach provided flexibility for probing and exploring emerging themes. Saturation was determined when consecutive interviews produced repetitive responses without generating additional insights or codes. To ensure that the point of saturation was not prematurely assumed, the researcher continued with two further interviews, which confirmed that no new themes were emerging. Interview questions were initially developed in English; however, given that both the researcher and participants were fluent in Ewe and English, the interviews were conducted in both languages. The questions were designed based on the research objectives and existing literature.

Individual In-depth interviews were conducted with two individuals directly affected by the dam spillage, and all key informants. These interviews served as a platform for an in-depth exploration of individual experiences, perceptions, and responses. By employing semi-structured interviews, the study was able to collect rich qualitative data, enabling participants to share their personal narratives and emotional responses (Rubin & Rubin, 2012). Each interview session lasted between 45 and 60 minutes, conducted at the convenience of both the researcher and participants. With the consent of the participants, all interviews were audio-recorded to ensure accuracy and facilitate analysis.

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Focus group discussions (FGDs) were organised with two groups of participants consisting of nine males and nine females each. These discussions facilitated group interactions and generated insights into shared experiences and opinions. The discussion was conducted at the Mepe Congregation of the Presbyterian Church of Ghana with sessions lasting between 60 to 90 minutes at a time convenient to both the researcher and participants.

Participants were included to ensure representation across different age groups and genders. The researcher conducted FGDs, fostering open discussion and ensuring all participants had an opportunity to contribute to the research. The sessions were audio-recorded with the consent of participants, then translated into English and transcribed verbatim. In addition, field notes were taken to capture non-verbal cues and other relevant observations, ensuring a comprehensive record of the interactions.

Observation was conducted in the affected area, focusing on events, community dynamics, and environmental changes. The researcher recorded field notes during visits, describing physical conditions, community interactions, and immediate responses to the spillage. These observations were later coded alongside interview and FGD transcripts to provide contextual grounding and to verify accounts shared by participants. Observation provided contextual information and was particularly valuable for understanding the immediate aftermath of the spillage, capturing real-time data, and identifying unanticipated factors.

Photovoice, as established by health promotion researchers Wang & Burris (1997), involved combining photography and storytelling. This method allowed participants to use photographs taken and selected by themselves to reflect upon and explore the reasons, emotions, and experiences behind their chosen images during the Individual In-depth interviews with the two individuals and focus group discussions. These images were visuals that reflected the destruction of property, the loss of livelihoods, and community responses to the disaster, and they were incorporated into

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analysis as visual texts. The researcher wrote analytic memos linking images to participants' narratives and categorised them under emerging themes, thereby strengthening the interpretation of data from other methods. Photovoice enabled participants to visually capture and share their lived experiences, offering deeper insights into their perspectives. Through this participatory approach, individuals could express their feelings and experiences in a way that transcended words, adding a unique dimension to the study.

Document analysis was conducted by reviewing media reports, NGO publications, and local government records on the Akosombo Dam spillage. These documents provided background information, validated participants' accounts, and highlighted institutional responses. The data from document analysis were coded alongside other qualitative data sources to ensure triangulation.

3.11 Data Handling

To protect participants' information, all interview recordings together with their written versions were kept in a secure location on the researcher's computer, which was accessible only through a personal password. A secondary version of the data was preserved in a restricted Google Drive folder to prevent possible loss. Participants' real names were replaced with codes to ensure their identities remained confidential throughout the study.

3.12 Data Analysis

Thematic analysis was used to analyse the data collected. The process followed the six steps of qualitative data analysis as outlined by Creswell (2013). Firstly, the researcher organised and prepared the data for analysis by transcribing all recorded interviews into English. Interviews conducted in Ewe were first translated into English and transcribed verbatim maintain meaning. The English transcripts were then given to a research assistant fluent in both languages, who back-translated them into Ewe and compared selected sections with the original audio files. This process ensured accuracy and minimised the loss of meaning during translation. Following transcription,

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the researcher familiarised themselves with the data by repeatedly reading and reviewing the transcripts. This immersion allowed for a comprehensive understanding of the information and reflection on its deeper meanings.

Next, the researcher coded the data by segmenting the transcriptions and labelling these segments with codes that described the data at various levels. This coding process helped in identifying patterns and themes within the data. The researcher then generated themes for analysis, aligning these themes with the major findings from the data. These themes were used as headings in the findings section of the study, providing a structured way to present the results.

Data from photovoice, observations, and document analysis were integrated into the coding process to ensure that findings reflected multiple perspectives. Observational field notes were used to contextualise participants' accounts, while photographs and their accompanying narratives were coded as visual and textual data. Documentary sources provided an external reference point and were compared with interview and FGD data to check consistency and highlight divergences. The analysis achieved triangulation, enhancing credibility and offering a fuller understanding of how the spillage affected victims' lives by bringing these sources together.

Table 1: Sample of generated codes and themes

Participants' Voices	**Code Name**	**Themes**	**Sub-Themes**	**Interview Questions**
"Before the spillage, we depended on farming and fishing to sustain our	Livelihood Impact	Economic Disruption	Loss of Primary Income Sources	How did the spillage affect your primary livelihood?

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families and preserve our traditions."				
"We are still struggling to rebuild our lives, with most of our properties destroyed and homes submerged."	Property Loss	Impact of Disaster	Damage to Homes and Personal Belongings	What challenges are you facing post-spillage?
"The authorities held meetings, but some of us did not fully understand the risk until it was too late."	Insufficient Awareness	Disaster Preparedness Issues	Limited Risk Awareness and Education	How prepared did you feel for the disaster?
"We had to rely on each other and aid groups, as immediate help was scarce and relief items were limited."	Community Support	Coping Mechanisms	Reliance on Local Support Networks	What support mechanisms have been most helpful to you after the spillage?
"To prevent future incidents, we need river defences, dredging, and better	Preventive Measures	Future Disaster Prevention	Infrastructure and Environmental Measures	What measures do you believe would reduce the impact

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infrastructure in place."				of similar future disasters?
"It has affected our children's schooling, and many of them have nowhere to go for proper classes."	Educational Impact	Social Impact of Disaster	School Closures and Makeshift Arrangements	How has the disaster impacted essential services, like education, for your family?
"The mental toll has been hard. Some of us lost everything, and we need more psychological support."	Psychological Impact	Health and Well-being	Need for Mental Health Services	What types of support do you feel are necessary for the community's recovery?
"If we had regular simulation exercises, we would understand how to respond better in the future."	Simulation Need	Improved Preparedness Strategies	Enhanced Training and Awareness	How could preparedness measures be improved to prevent such impacts in the future?

Source: Field of Study, 2024

In the subsequent step, the researcher described and presented the themes using narrative passages. This descriptive approach conveyed the findings of the analysis in a detailed and accessible manner. Finally, the researcher interpreted the meanings of the themes in relation to the study's objectives.

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This interpretation provided insights into the significance of the themes and their relevance to the research questions.

3.13 Trustworthiness and rigor

To ensure trustworthiness and rigor in the study, various validation techniques were utilised, including member checking, triangulation, bracketing, and peer debriefing. Member checking was used to validate the accuracy and relevance of the preliminary findings and interpretations. This technique involved sharing the emerging themes with selected participants to ensure that their experiences and perspectives were accurately represented. By soliciting feedback from the participants, the researcher aimed to confirm the authenticity of the findings and make necessary adjustments based on their input.

Triangulation was employed to enhance the credibility of the data by utilising a variety of methods and approaches for data collection. This approach involved combining different data sources, such as interviews, focus group discussions, photovoice and observations, to provide a more comprehensive understanding of the research topic. By integrating multiple data collection methods, the researcher was able to cross-check and validate the findings, thereby strengthening the overall reliability of the study.

Peer debriefing was another technique used to ensure rigor in the research process. The researcher engaged in discussions with supervisors. This process of seeking feedback involved presenting the entire research process, including methodology and preliminary findings, to identify any potential weaknesses or biases. The input from these knowledgeable individuals helped in refining the study and addressing any possible issues, thereby enhancing the trustworthiness of the research (McMahon & Winch, 2018).

Bracketing involves the researcher setting aside personal biases, preconceived ideas, and prior knowledge to approach the study with a fresh perspective. This ensures that the researcher's

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preconceptions do not influence the data collection or interpretation process (Hamill, 2010). In this study, the researcher made a concerted effort to bracket any prior assumptions about the community of Mepe and the impact of the Akosombo Dam spillage before engaging in the participants.

3.14 Ethical Considerations

In ensuring the ethical conduct of the study, several key measures were undertaken, including seeking IRB ethical clearance, maintaining confidentiality, obtaining informed consent, and addressing plagiarism concerns.

The researcher sought ethical clearance from the Ethics Committee for Humanities (ECH) at the University of Ghana before initiating the research. This process involved submitting a detailed research proposal to the committee for review to ensure that the study adhered to ethical standards and protected the rights and well-being of participants. The researcher received ethical clearance from the Ethics Committee for Humanities (ECH), University of Ghana, on 19th February, 2024.

Confidentiality and anonymity were maintained throughout the research process. The researcher ensured that participants' identities were kept confidential and not disclosed to any third parties. To safeguard their privacy, pseudonyms were used in place of real names in all records and reports. Additionally, the researcher took steps to ensure that the information provided by participants could not be traced back to them, further protecting their anonymity.

Informed consent played a vital role throughout the research process. Participants were provided with consent forms detailing the study's purpose, objectives, and procedures. Before recording any interview, permission was sought from each participant. The researcher made it clear that participation was entirely voluntary, and individuals were informed of their right to withdraw from the study at any point without facing any consequences.

In line with ethical research practices, the researcher ensured academic integrity by properly referencing all sources utilised throughout the study. This included accurate citations for authors

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and their works, thereby maintaining the ethical standards necessary for upholding the credibility and trustworthiness of the research.

3.15 Conclusion

This chapter detailed the methodology used in this study and focused on a qualitative approach to explore the lived experiences of victims affected by the Akosombo Dam spillage. The study utilised a phenomenological approach to delve into the participants' lived experiences, employing semi-structured interviews, focus group discussions, direct observations, and Photovoice to gather comprehensive data. The research design included purposive sampling to ensure a diverse representation of affected individuals and stakeholders. Data analysis followed thematic analysis principles, ensuring rigor through techniques such as member checking, triangulation, bracketing and peer debriefing. Ethical considerations, including IRB clearance, confidentiality, informed consent, and plagiarism, were thoroughly addressed.



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CHAPTER 4

PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the findings from the study. The findings are presented thematically, capturing the voices and perspectives of the participants to reflect the lived realities of those affected. This study explored the lived experiences of victims affected by the Akosombo Dam spillage in Mepe.

4.2 Demographic Characteristics of Participants

This section presents the demographic characteristics of the study participants, who were grouped into two categories: victims of the Akosombo Dam spillage and key informants. The victims directly experienced the impact of the spillage, while the key informants provided expert insights based on their roles in the community. The demographic characteristics of both groups are essential in understanding the variety of perspectives that informed the findings.

Table 2: Victims' Demographic Characteristics

Characteristics	**Number**
Gender	
Male	10
Female	10
Age	
18 – 30 years	5
31 – 40 years	4
41 – 50 years	2
51 – 60 years	7
61 years and above	2

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Relationship Status	
Single	3
Married	17
Duration of Stay in Mepe	
6-10 years	5
11 years and above	15

The victims who participated in the study had diverse demographic characteristics that provided a broad range of insights into the impact of the Akosombo Dam spillage. The group had an equal gender distribution, with 10 male and 10 female participants, ensuring that both genders were equally represented in the study. The age of the participants spanned across five categories, with seven participants falling within the 51-60 years range. This suggests that many of the victims were older adults, likely with established livelihoods that were directly impacted by the spillage. Five participants aged between 18 and 30 years, representing younger adults who are likely in the earlier stages of building their livelihoods. Four participants were aged 31-40 years, two participants were 41-50 years, and two participants were 60 years and above, contributing to a diverse age representation.

In terms of their duration of stay, 15 victims had been residents for over 11 years, which suggests that they were deeply rooted in the community and likely had more at stake when the disaster occurred. Five had been in the community for 6–10 years, highlighting that the sample consisted mostly of long-term residents. Regarding relationship status, 17 participants were married and three participants were single. This reflects stable family structures and could influence the community's ability to rely on family networks for support during the crisis. This also indicates that many participants came from households with strong familial support systems.

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Table 3: Key Informants' Demographic Characteristics

Characteristics	Number
Gender	
Male	3
Female	3
Age	
18 – 30 years	0
31 – 40 years	1
41 – 50 years	2
51 – 60 years	2
61 years and above	1
Years Worked in Mepe	
0-5 years	1
6-10 years	1
11 years and above	4

The key informants were evenly split between males and females, providing balanced gender representation in the data. The age distribution of the Key Informants shows a concentration in the 41-50 years and 51-60 years' age groups, each comprising two participants. This suggests that middle-aged adults are most represented in the study. The 31-40 years and 60 years and above groups each had one participant, reflecting fewer younger and older adults in the sample.

In terms of work experience in Mepe, four key informants had been working in the community for over 11 years, providing valuable long-term insights into the community's adaptive strategies and its evolving response to environmental challenges such as the spillage. Additionally, one key

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informant had worked in Mepe for 0-5 years and another had worked for 6-10 years, offering a blend of fresh perspectives and institutional knowledge.

4.3 Pre-Disaster Lives of Victims of the Spillage in Mepe

This section presents an overview of the daily lives of the victims of the Akosombo Dam spillage before the disaster. The narratives provide insights into their daily routines, socio-economic activities, levels of preparedness, and settlement conditions, all of which were significantly disrupted by the spillage. Through their accounts, a picture of the community's way of life and their relationship with the river emerges, showing how their livelihoods and social structures were intertwined with the environment.

4.3.1 Daily Routine

Before the spillage, participants shared that life in Mepe revolved around well-established routines, deeply intertwined with the community's social and economic fabric. The daily activities of the residents were primarily centered around farming, fishing, and small-scale trading, with each household contributing to the overall economic stability of the area. Mepe was a close-knit, self-sufficient community, where individuals worked not only to provide for their own families but also to support the broader communal network. A strong sense of solidarity and resourcefulness defined the community, as many people engaged in dual occupations to sustain their livelihoods.

For example, a participant described her daily routine, which involved crossing the river to reach her farm, where she harvested food crops and set fishing nets. This multi-tasking approach ensured her family's sustenance and provided additional produce for sale. She explained:

> *Each day, I do my house chores which includes getting my children ready for school before 6:00am. After the children leave for school, 1 also leave to my farm across the river using a canoe. I go there at times to harvest some food crops for the family and to get some for sale. On my way to the farm, I normally set my fishing nets in the river before getting to the farm.*

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> *At about 12noon, I come back home to rest a little and then go out to sell the harvested food crops from the farm. Later in the afternoon at about four to five in the evening, I go back to check on my nets to see if I caught some fishes and then return home with my harvest from the nets which I sometimes sell if I get a good catch.* (Female, 55years, FGD)

Another participant, emphasised the critical role of the river in providing economic stability for his household. He said:

> *My life before the spillage was very good. I had three fishponds in the river which I checked on daily because the fishes need to fed twice every day and I do harvest for them sales on every Tuesday. I work as an evangelist in the Community where I preach to the people. My business is to help people financially or materially where they bring it back later. I also sell cloth, bowls, kitchen wares and I do this with my wife. My family ate very well without any challenge.* (Male, 52years, FGD),

Some key informants also echoed the point that the people of Mepe relied on the river for various activities.

A key informant had this to say:

> *Well, before the spillage, life has been normal and things have been moving well. The people go about their daily activities and the local economy has been moving well. Fisher folks and farmers go to work. Teachers and children going to school, market women going to the market, petty traders going to their respective areas. On Fridays, they have their funerals which normally a lot of people come into the town from Tarkwa, Germeni, Accra etc. so on weekends, you will see a lot of people in the community all because there are funerals and during their festivals, people come to grace the occasion.* (Male, 33years, IDI)

These narratives highlighted the river's central role in shaping the economic and social lives of Mepe's residents. The river was not just a geographical feature; it was the foundation upon which

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the community built its livelihood strategies. The combination of farming and fishing served as an adaptive approach, allowing families to meet their needs through multiple avenues of sustenance.

4.3.2 Vibrant Socio-Economic Activities

Participants highlighted the stability and vibrancy of the local economy in Mepe, which was primarily based on a diverse range of activities, including farming, fishing, and small-scale businesses. This economic diversity was a hallmark of the community, with many residents engaging in multiple income streams that allowed them not only to sustain their families but also to contribute significantly to the broader social fabric of the area.

A participant shared her experience, revealing the dual nature of her income-generating activities. She stated:

> *I am an herbalist. When I wake up in the morning, I prepare medicine after which I go to the farm. Some people come to my house for the medicines and certain times, I take them out to sell in the town and even travel out of town to sell in neighboring towns or far. In a day, I could make about 1000 cedis or 1200 cedis. But until sometime, selling was not moving well therefore, after people come for goods, I leave for the farm and come back later to sell the medicine in the town but I do that mostly on market days. However, I am more focused on farming now because, I'm able to get a lot of the harvest from the farm to feed my family and even sell some.* (Female, 44years, FGD)

Similarly, another participant elaborated on how he balanced multiple roles to make a living:

> *I used to sell drinks where I earned a lot because no matter how difficult things were, I could sell about 1,500 worth of goods daily and I even close from my store at 12:00 am at times. As a photographer as well, I've been getting jobs at people's weddings, funerals, outdooring, etc., and I travel far and near to do my work. Work was very lucrative because I earn a lot of money by the close of every week.* (Male, 59years, FGD)

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Economic activities in Mepe extended beyond just farming and fishing. Many residents participated in small businesses, teaching, and various forms of petty trading, creating a rich tapestry of livelihoods that contributed to a diverse and self-sustaining local economy. A key informant noted:

> *In Mepe, life was better because is like everybody was living in his or her home, at least they have a plan even though economic hardship is there but they were managing. Most of them are into farming, and they farm around Degorme, Dadome, Adutonu area; those are the villages around the town. Some are teachers, fisher folks, petty traders, businessmen and women. There are no companies so that's what they do, and everyone or every person wants to do something to earn a living. Most farmers have their farms across the river so they mostly combine fishing and farming.* (Female, 51 years, IDI)

The thriving economy before the spillage paints a picture of a community that was resourceful, industrious, and largely self-reliant. The ability to adapt and diversify income sources exemplified the community's ingenuity and commitment to sustaining their way of life, which ultimately enhanced their collective well-being.

4.3.3 Preparedness and Awareness

Participants indicated that, while there were efforts to prepare the community for potential emergencies, the effectiveness and perception of these measures were mixed. Some residents recalled detailed sensitisation efforts conducted by local authorities, such as the National Disaster Management Organisation (NADMO) and the Volta River Authority (VRA), aimed at educating the community about disaster preparedness and response.

One participant, vividly remembered the engagement of local leaders in these initiatives:

> *I remember that before the spillage, the assemblyman, NADMO, and the police came to educate the community about what to do in case the water reaches your home. In their demonstrations, the elderly had carried their belongings and the children were walking*

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alongside them. Those who had health challenges like heart attack were carried in ambulances to the hospital. All these were to tell us how the submerging will affect people and if it truly happens, the community must act fast. They did lots of examples. I was even tensed and called my father to inquire about the news about the spillage. He confirmed but assured me not to be afraid. This demonstration was done, two to three months before the spillage. (Female, 40years, FGD)

Similarly, a key informant elaborated on the annual nature of these preparedness activities, highlighting their regularity and the systematic approach of the authorities:

Before the spillage, Fire service, Police Service, NADMO, Health service and the Traditional authorities met and did community sensitisation. They even demonstrated how the spillage was going to be and marked areas which were safe havens that in case there is spillage, you move to these places. So, they did all those things in the community and other communities that they knew will be hampered when the spillage is done. It has been an activity VRA does every year and when they did it last year, people were carrying information that they should leave their rooms because the water was coming. At the time, the spillage did not even start and it created fear and panic among the citizens. So, they actually did the sensitisation, VRA did that. (Male, 75years, IDI)

Another participant expressed dissatisfaction with the information disseminated by the authorities:

I did not hear anything before the real thing happened. Earlier on, they came to fix a signboard at the school compound that we should go there if there is a spillage. I was at home when I heard the noise coming from the information Centre that the water was coming so we should all run to St. Kizito. I was like Oh, the water is coming but where is the water coming from? Truth be told, a lot of people were running and I was afraid so I packed a few things and followed the others to St. Kizito but the water never came. Due to that, we all

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relaxed and forgot about the spillage before it actually happened. If they had been very specific with the dates, it would have been better. (Male, 35years, FGD)

These varied accounts indicated that while institutional efforts were made to prepare the community, the communication and effectiveness of these efforts were inconsistent. The disparity in experiences suggests that a one-size-fits-all approach was not effective in addressing the diverse needs and expectations of the community. As a result, some residents felt unprepared or unaware of the impending danger.

4.3.4 Settlement and Unauthorised Structures

Participants highlighted significant issues related to the community's settlement patterns and the quality of housing structures in Mepe. A considerable number of residents lived in low-lying areas or near to the river, often in unauthorised or poorly constructed homes. This precarious living situation rendered them more susceptible to the risks associated with flooding, particularly when the spillage occurred.

A participant articulated the challenges of living in such an environment: She said:

Our settlement in Mepe is situated on low-lying land, making us vulnerable to flooding. Sadly, it's only a few residents who are living in the hilly areas. Unfortunately for many of us, the majority of our houses are constructed from mud, which offers little or no protection from the floodwaters. Even some of the buildings made from blocks are not strong or well-structured, leaving them vulnerable to damage or collapse during floods. (Female, 56years, FGD)

Another participant shared his personal experience living near the river in a family-owned area. He stated:

My home is very close to the river, and I had built about 10 of those structures out of mud and wood. That place has been my family land for many years. Since I needed a place to

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> *build, my late father allowed me to construct my home there. I have been living there with my wife and children for over 40 years now, creating countless memories and raising my family. It's a place that feels deeply rooted in my family's history and tradition.* (Male, 59years, IDI)

Key informants also acknowledged the prevalence of unauthorised structures and the absence of proper building permits within the community. A key informant remarked:

> *Mepe as a traditional area is very old, and development has taken place over the years. People are building day in and day out, and most people have built in waterways without permits. Some of the storey buildings you will see in the town are even made out of mud and unfortunately, most homes that are built are not very strong. There are streams in Mepe and Battor, so as the spillage came, the water found its way to meet that stream. Also, if you are building by the river side, you should know that when the river overflows its banks, it is going to worry you and same applies if you build in the way of the water. If you get to Mepe, the land topography is such that it is up, down and up, so all those who are up, had no issue, but those who are down, they were affected.* (Female, 43years, IDI)

These narratives collectively revealed that the community's settlement patterns, coupled with unauthorised building practices, significantly increased their vulnerability to the spillage. Many homes were structurally weak and situated in flood-prone areas, exacerbating the impact of the disaster.

4.4 Current Living Conditions of Victims of the Spillage in Mepe

This section presents the findings on the current living conditions of the flood victims in Mepe. The data collected revealed the impact on various aspects of life, including loss of homes and possessions, livelihoods and businesses, health, and social life. The participants' narratives reflected the challenges they faced in the aftermath of the disaster.

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4.4.1 Loss of Homes and Possessions

The immediate aftermath of the Akosombo Dam spillage in Mepe was characterised by the profound destruction of homes and personal property, leaving residents grappling with the chaos and devastation that ensued. Participants articulated their experiences, offering insights into the emotional and physical toll the disaster had on their lives.

One participant described how she faced the oncoming floodwaters:

> *Truth be told, when I saw how the water was coming with pressure and speed, I was very tensed. I left majority of my things in the room because some people had packed some of the things out for me. After three days of the submerging, there were boats on the water where people were diving into the water and packing things out of people's homes at a fee. Because I had a fridge and clothing in the water, a good Samaritan helped me bring out some of my bags containing my clothing but the rest including my bed, mattresses, wardrobe and a lot were still in the room when the building collapsed.* (Female, 68years, IDI)

Another participant shared his personal losses. He said:

> *At my end, 10 mud houses belonging to me and one for my brother making it a total of 11 houses collapsed. With the strength the flooding came with, nothing was moved out so everything inside got destroyed. You can imagine 11 rooms with what they contained. I felt very bad and disappointed because all that we toiled for so many years got destroyed in a day through no fault of ours. My maize and cassava farm were all submerged. All my belongings including mattresses, television, fridge, clothing, cooking utensils etc. are all gone. My children were afraid so they left the town; some to Ashiaman others to unknown places, Afram plains, Sege etc. and up till now, it's only one of them that came back later with his wife.* (Male, 42years, FGD)

A key informant further emphasised the impact of the disaster:

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After the spillage, things have not been normal because it was soo disastrous; half of the town was covered with water. The electricity polls were in the water so there was a blackout because, the light would have caused so many deaths. Many houses were down that is collapsed including mine. As I'm speaking to you now, I am homeless, I don't have my home. Many people, over 12 thousand peoples' homes are down and life has not been normal. Our 'Tongu Blotsi' that they call Mepe was not the same as it used to be. It was like a deserted town. Where the impact was felt, nobody was seen there. That is almost half of the population in Mepe, were off the community. (Male, 56 years, IDI)

Collectively, these narratives portrayed a vivid and heart-wrenching image of the devastation caused by the spillage. The emotional weight of lost possessions, the physical destruction of homes, and the sense of community dislocation conveyed the profound effects of the disaster on the lives of the residents of Mepe.

Another participant shared a deep personal narrative connected to loss, saying;



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"Our personal belongings, including treasured family items and essential household goods, were swept away by the floodwaters. This photo shows the remnants of what we lost."

This photograph captures the toll of the disaster by portraying the irreplaceable memories and essential household items that were swept away by the floodwaters. For many families in Mepe, the material losses are not limited to functional objects but also include treasured possessions that hold significant sentimental value. These items often serve as physical connections to loved ones, family histories, and cultural heritage, making their loss deeply personal and emotionally devastating.

The image underscores the psychological impact of the spillage on affected individuals and families, reflecting how disasters like these extend beyond physical destruction to affect the mental well-being of survivors. Losing cherished belongings, such as family heirlooms, photographs, and important documents, can create a sense of disorientation and grief, as these items represent memories, identity, and continuity. For many, the loss of these possessions signifies a rupture in the narrative of their lives, heightening feelings of helplessness and despair.

In addition to sentimental items, the destruction of essential household goods such as furniture, clothing, and cooking utensils. further exacerbates the emotional burden. The loss of such items forces families to confront the immediate challenges of survival while also grappling with the long-term psychological strain of rebuilding their lives from scratch. The inability to recover basic comforts and personal belongings adds to the mental exhaustion of navigating the aftermath of the disaster.

This photograph thus vividly illustrates how the spillage has triggered both material and emotional losses, leaving families not only displaced from their homes but also disconnected from their pasts. The psychological impact, marked by stress, anxiety, and trauma, highlights the need for emotional support and mental health services to help individuals and communities process their grief and begin the healing process. It is a reminder that recovery efforts must address both the physical and

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emotional dimensions of disaster relief to truly restore well-being and resilience in affected communities.

4.4.2 Loss of Livelihoods and Businesses

The Akosombo Dam spillage profoundly disrupted the livelihoods of the residents of Mepe, leading to widespread economic hardship. Participants detailed the devastating impact of the disaster on their ability to earn a living, resulting in many struggling to meet their basic needs.

One emotional account from a participant who identified herself as a baker. She conveyed her distress over the destruction of her business:

> *Hmmm, this whole spillage issue is a lot to take in. I am a baker and my workplace collapsed due to the flood. My oven was left in the water, so it is spoilt. I opened it to check the inside, and it is beyond repair. I even tried setting fire inside to bake but I got electrocuted. I had just gotten back from buying goods including flour, sugar, margarine, making powder and a lot a week earlier to the day of submerging but I lost all of that to the flood. If I were around on the day the flooding entered my shop, I could have managed to pick somethings but I had left town. All my working equipment was spoilt, and the few that I kept elsewhere were also stolen.* (Female, 35 years, FGD)

Another participant shared how the flooding impacted his work. He stated:

> *I am a farmer, a barber, and I had fishponds. I was on my farm when I heard the water was coming so, I quickly rushed to return home. By the time I crossed to this side, the flood had carried my fishpond away, and there was nothing left. Meanwhile, I was supposed to sell its harvest the next day. By the time I got to my house, most of my things were stolen including my fan, spraying machine, barbering tools, and a lot more. I lost almost everything.* (Male, 61years, IDI)

A key informant provided a broader perspective on the economic impact on the community:

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> *Most of them, their livelihoods were lost. One woman who sells clothing went to Accra to come and stock her container. But the water had taken up and filled the container with all those GTP cloth and the rest before she got back. So, she just had to stand by it and was like, 'Eii, full of water". So, livelihoods were lost, farms were just flooded. Buying and selling has also reduced because, the population has reduced and people are no more having the money to buy because they have lost their sources of income. The whole population has scattered so income wise, those who were selling, is like they are not getting the money that they used to get so in so doing. Life was really difficult for most of the citizens.* (Female, 47 years, IDI)

The disaster created losses that extended beyond immediate physical destruction, fundamentally altering the economic landscape of Mepe and leaving residents grappling with uncertainty about their futures.

One participant highlighted the impact on agriculture, stating;



"This photograph shows the destruction of our maize fields after the spillage. Farming was our main livelihood, and this loss has severely impacted our food security."

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This image sadly illustrates the far-reaching consequences of the spillage on local farming, which served not only as a vital source of income for many families but also as a crucial element of the community's sustenance. Farming in Mepe has traditionally been the backbone of the local economy, providing not just food for the households but also generating employment and fostering community cohesion through shared agricultural practices. The devastation depicted in the photograph reflected more than just lost crops; it signified the disruption of a way of life that has sustained generations.

With the destruction of maize fields, many farmers face immediate food insecurity, which threatened their ability to feed their families and meet basic nutritional needs. This loss extended beyond individual households, affecting the entire community's access to affordable food, leading to potential price increases and further economic strain. Moreover, the impact on local farming can create a ripple effect throughout the community, as reduced agricultural output diminishes income levels, resulting in decreased spending power and overall economic vitality.

Additionally, the destruction of farmland undermines community resilience. When families are unable to grow their own food, they become increasingly reliant on external sources, which can be unpredictable and costly. This reliance not only jeopardises food sovereignty but also increases vulnerability to future shocks, as seen during the spillage. The image captured a moment of loss that encapsulated the broader implications for the community's social fabric, economic stability, and long-term food security, highlighting the urgent need for support and intervention to help restore agricultural livelihoods and foster resilience against future disasters.

4.4.3 Health Impacts

The Akosombo Dam spillage not only resulted in physical destruction but also had significant health repercussions for the residents of Mepe. Participants reported a range of physical and mental health

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challenges they faced in the aftermath of the disaster, underscoring the multifaceted nature of the crisis.

A participant shared her health experience following the spillage. She shared:

> *Looking at how high the water had climbed walls and I could not even cross it; I became very devastated. I ended up walking from Mepe to Sege without realising it. When I got back from Sege, I tried removing some of the things from under the collapsed building but, I got sick and had boils all over my body. I visited the medical Centre at St. Kizito and Battor Catholic Hospital where they ran tests on me, but they couldn't tell me what was wrong with me, so I just returned to my temporal accommodation. Till now, I feel like my mental health is not stable because, I think a lot when I am alone and I'm just living life for now.* (Female, 44years, FGD)

Another participant spoke about how the disaster exacerbated pre-existing health issues:

> *I am just coming from the hospital. I have been operated upon before and advised not to engage in heavy-duty tasks. But because everyone was thinking of themselves, I was forced to do most work which has caused another problem to my waist. I have been thinking a lot to the extent that I have developed headache and as I'm speaking, my head is aching me. I'm always teary-eyed and I feel dizzy. The spillage brought a lot of health challenges to me.* (Male, 52 years, FGD)

A key informant provided a broader view of the health risks posed by the spillage:

> *Since then, people have been thinking a lot and they are depressed and most people's lives have been shattered. Refuse dumps, cemeteries and toilet facilities were destroyed and carried by the water. Meanwhile, it was the same water we were drinking, which resulted in a lot of cholera cases. Those who had to rescue their belongings from the flood by stepping*

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into the water had their legs swollen and a lot of people complained about suffering from rashes. (Male, 33 years, IDI)

Overall, the accounts from participants and key informants painted a picture of the health crisis in Mepe post-spillage. The interplay between physical injuries, existing health conditions, and mental health challenges highlighted the complex and urgent health needs of the community.

4.4.4 Social Life

The spillage had a profound and far-reaching impact on the social lives of community members in Mepe, disrupting cultural practices and communal activities that are central to the community's identity. Participants vividly described how their social fabric was torn apart by the disaster, illustrating the loss of connection, tradition, and normalcy.

A participant reflected on the immediate consequences for funeral activities and the sense of closeness, which hold cultural importance in the community:

When the spillage came, we stopped funeral activities because even the roads to some of the cemeteries have been blocked. Our main road here was taken over by the flood, so at times we put boats on them. Even some of our cemeteries were carried by the flood. Not even one funeral or any other activity even took place at the time. The closeness we used to have with neighbors also disappeared. My house had only three rooms but during the flooding period I had to accommodate 30 persons and we had sleepless nights. Unfortunately, power was also disconnected because of fear of electrocution so most of us had our phone batteries run low so there was no way to call a relative or a known person. (Female, 34years, FGD)

Another participant shared insight into how the spillage affected the community's ability to maintain social connections. He narrated:

Due to the flood, many people traveled out of town, making it difficult to see friends in person. You could talk on the phone, but meeting face-to-face became challenging because

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> *even crossing the water was difficult. At that time, the area from Kizito to Gborta Junction was flooded. You can only cross with canoe or engine boat and even that one was also a challenge because if you will have to cross, you will pay money; 3cedis, when you are going back: 3cedis. So, if you do not have the money, it means you cannot cross.* (Male, 22 years, FGD)

A key informant summarised the overall social impact of the spillage. She said:

> *With weddings, funerals, outdooring's, parties, etc. you can't see anything happening. There were no social activities throughout the spillage until the water receded to its maximum level before those things started again. All those who planned their funerals during that period had to settle on a different date since the flood has taken over. And even families that were together were relocated to the safe havens and they were sharing rooms with other people so, that family bond that you share and whatever was lost. Now you are there with other people so you will not have that feeling or affection. So, everything about them changed.* (Female, 43 years, IDI)

These narratives collectively illustrated the multifaceted challenges faced by the victims of the spillage in Mepe. The loss of homes and livelihoods, compounded by health concerns, highlighted a hazardous living situation that affected daily life.

4.5 Adaptive Capacity of Victims in Mepe

The spillage in Mepe prompted a range of adaptive responses from the community, demonstrating their resilience and ability to rely on local support networks during times of crisis. Participants reported various forms of assistance from family, friends, educators, and external organisations that played crucial roles in helping individuals cope with the immediate aftermath of the disaster.

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4.5.1 Community Support

The community support that emerged in Mepe following the spillage was critical for the survival and resilience of affected residents. Participants underscored the significance of local support networks, where family and friends offered vital resources, including food, water, and temporary shelter. This support helped many navigate the challenges posed by the disaster and facilitated their recovery.

One participant described her experience of relocating multiple times for safety:

> *When the flooding entered my home, I moved in with one of my siblings around St. Kizito but as we were there, we could be sleeping and we will hear people shouting that the water was coming so we were always scared. However, one of my sisters stayed at Alorvikpota, so we moved in with her. But the next day, we realised that the place will also be affected, so we moved to Sege. After four days of staying at Sege, my younger sister and her husband asked me to move in with them back in Mepe, and I came back since their place was safe. However, I moved again after almost two months of staying with them to my son's house. Overall, my siblings really supported me because my children and I never had problems with feeding. My brother always brought enough to feed all of us and personally, we had corn dough and other food stuff.* (Female, 58 years, FGD)

Another participant recounted his own experience of seeking refuge during the disaster:

> *The flood got to my home at night, so my wife, children, grandchildren, and I went to stay at an unknown place. The next day, I went to beg one man to allow us to stay at his uncompleted building. The place is in the outskirts of the community so people used the place as a toilet facility. After the owner allowed us to move in, we had to do a lot of cleaning. Meanwhile, there was no door to the place so we had to improvise with curtains. After a week, it became very difficult to stay there because my family were always complaining*

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about Mosquitoes and our safety. Fortunately, I contacted a friend on Sege road who asked that we should come to his place. He even came to convey us to his place with his motorcycle early the following morning and that helped us a lot. (Male, 59years, FGD)

Another key informant pointed to the broader sense of solidarity within the community:

They have an association; Mepe Development Association which is made by the community and they facilitated getting support from donors and since they are the lead agency, they also supported. Also, the chiefs and elders were also able to at least manage the situation and even gave out the land where the alternative housing unit has been built. Those who were not affected took some of the victims to be with them in their various homes. So, the community members who did not suffer, they accommodated most of their members. (Male, 75 years, IDI)

The willingness of family, friends, and neighbors to share resources and provide shelter exemplified the resilience and solidarity of the community. This contributed to the recovery process in the wake of such a devastating event.

4.5.2 Educational Support

Despite the significant disruptions caused by the flooding, participants in Mepe emphasised the proactive measures taken by teachers and community members to ensure the continuity of education for children. The commitment of educators and the community played a crucial role in mitigating the impact of the disaster on students' learning.

A participant recounted the challenges her children faced but also highlighted the efforts made by teachers to facilitate learning:

Because of the flooding, my children's education had to stop, and the children were home for a long time. Fortunately, the teachers made arrangements, and some students went to school at St. Kizito while others went to P.C.G School until the water started subsiding. If

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> *not for the teachers who did that arrangement, we don't know how the education would have gone. Also, because some of the children lost their school uniforms and other school materials like books, pens, etc., donors and our MP provided a lot of that for the students.* (Female, 34 years, FGD)

Another participant added to this narrative by discussing the temporary solutions implemented during the crisis:

> *We had to temporarily stop schooling. But after three weeks, we started going for classes at St. Kizito and that was for those of us who were at the over bank. Other students in the town, came to Presby primary for the classes but because classrooms were used us accommodations, we studied under trees. Some donors and our MP provided us with books, pencils, pens and a lot of stationaries. That helped a lot of us who were students to learn amid the flooding.* (Male, 18 years, FGD)

Furthermore, the involvement of community members in facilitating education during this crisis was notable. One key informant shared:

> *Some few people including teachers and Senior high school graduates adopted the measures of teaching the students in the camps under trees. Additionally, external donors and organisations contributed by providing educational materials and temporary learning spaces. Our MP also came out with a scheme to get volunteers so the children at the camp were gathered under trees and those in town crossed to go and meet them there. I was there a few times. I learnt some of the students stayed overbank but their education needs including books, pens, uniforms etc. were provided.* (Female, 43 years, IDI)

These narratives illustrated how a collaborative approach enabled children to continue their education during a time of crisis, fostering a sense of hope and normalcy amidst the chaos of the flooding.

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4.5.3 Emotional and Psychological Coping

The emotional and psychological toll of the flooding disaster in Mepe was a recurring theme in participants' accounts. Many emphasised the critical need for support systems that developed in response to the crisis, illustrating the community's resilience and collective strength.

One participant shared her experience of receiving medical assistance during this challenging time:

> *During the flooding, our assembly member and MP, Hon Samuel Okudzeto Ablakwa, made some doctors come around twice, and I benefitted from their services once. I told them I am not able to sleep at night and they asked me why I wasn't sleeping of which I told them I was thinking about how to rebuild my home. They asked again who will rebuild for me since I was thinking and I told them I haven't gotten any one. So, they spoke with me a lot and advised me to stop thinking because it will only make me sick. They gave me some medicines which have helped a lot and asked me to call them to give them feedback on how I felt after taking the medicines and I did.* (Female, 40 years, FGD)

Another participant reflected on the emotional support that emerged among community members:

> *We became like orphans. Once in a while, we were told the health workers were around, but they normally do not start early. They will let us line up for the services. All of a sudden, they will only come up to say they could only attend to a certain number say 50 and leave. It will take them sometime before they come again. So, some of us never benefited from their services and this increased our thinking levels making us develop BP. However, we relied on talking and advising each other, which gave hope to a lot of us in the camps.* (Male, 26 years, FGD)

Additionally, a key informant highlighted the role of counsellors in supporting emotional well-being:

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When it happened, most of them were a bit down, most of them didn't know what to do because if for instance, that's your livelihood, now it is gone. Some will tell you that it is better they are not even alive than to be alive to be witnessing these things. But we encouraged them that all hope is not lost and since we have life, we have hope. We have seen counsellors coming around as well, talking to people, and making sure they are not overwhelmed by the situation. Those who needed medicines to calm down were attended to as well. Even though we have lost so much, we have also realised how strong we are together. (Male, 47 years, IDI)

In summary, the emotional and psychological complications of the flooding disaster were significant, yet the community's response revealed a strong network of support and resilience through local leadership, peer support, and the presence of counselling services.

4.5.4 Support from Churches, VRA, NADMO, and NGOs

The support provided by various organisations, including the Volta River Authority (VRA), the National Disaster Management Organisation (NADMO), local churches, and non-governmental organisations (NGOs), played a pivotal role in assisting the community of Mepe in the aftermath of the flooding. Participants emphasised the significance of this external aid in helping them cope with the disaster's aftermath and begin the recovery process.

A participant recounted the support received from the donors, NGO's and her church. She said:

I was just there when they called me for a meeting at Battor which I went and I was given 1,700cedis. Later on, a good Samaritan from Red Cross also came to write my name and I was given a box that contained clothing and food and 600 cedis as well. A Muslim community came and I benefitted from them as well. I am a Presbyterian and the church did a lot for us. Our Moderator ordered for cooked meals, and it was distributed among us several times. After that, other Presby churches also brought relief items such as food,

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clothes, mattresses, and many more. Later on, our account was also credited with one thousand one hundred Cedis. I will say Presby has been good to us and other citizens in the town as well. (Female, 54 years, FGD)

Another participant acknowledged the contributions from a range of organisations:

I received a lot of things from individuals, VRA, and NGOs, of which I cannot even mention, but they were not enough. I am a catholic and a lot of things were distributed among us Church members and although it has been long, I went to church, I got a lot from the church. The group I belong to in the church, thus Perpetual Help, also sent some relief items which I got some. I also got somethings from the MP and NADMO. I received a mattress, bags of rice, other food items, and many more but I had to share with my friends and family who could not get some. So, it was definitely not enough for us. (Male, 22 years, FGD)

Furthermore, a key informant provided insight into the collaborative efforts to provide aid:

NADMO, VRA, the Police, Fire service and all other services did very well because, when the flooding started, they were up to the task. You could see that they have really prepared if not, we would have loss lives but no single person, loss his or her life. NADMO, was on top of issues; at the camps, they have camp leaders and supervisors. Day and night, they were moving to the camps checking and making sure that everyone is safe. And the provision of logistics or food items from NADMO and VRA were coming as expected and it brought relieve to the people. Our MP Okudzeto also did very well, and other agencies from the Christian, Muslim, well-wishers, the media and NGOs came to our aid with food, water, mattresses and a lot more and it really helped because government couldn't have done everything alone. (Female, 51 years, IDI)

The support from churches, government organisations, NGOs, and the solidarity within the community were critical in navigating the challenges posed by the disaster. Together, these efforts

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fostered a sense of resilience and hope, underscoring the importance of collaboration and community in the face of adversity.

Participants also shared;



"Housing and infrastructures were destroyed by the floodwaters leaving some victims homeless. This photo shows where some of us had to reside."

This photo vividly illustrated the realities faced by Mepe residents after the flooding. The destruction of housing and infrastructure left many individuals and families without secure shelter, forcing them to improvise and live in temporary and inadequate accommodations. The structures seen in this image are more than physical spaces; they represent a compromise born of necessity, lacking the comfort, stability, and protection that a permanent home provides.

For many, these temporary living conditions disrupted normalcy and threaten safety and well-being, exposing them to vulnerabilities, such as health risks and emotional distress. The image highlighted the contrast between the lives once led in stable homes and the harsh new reality imposed by the flood. It served as a reminder of the need for sustained recovery efforts that prioritise safe housing solutions, infrastructure rebuilding, and long-term resilience measures.

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4.6 Strategies to Reduce the Consequences of Future Disasters

In the wake of the devastating flooding in Mepe, participants emphasised the need for comprehensive strategies aimed at reducing the impact of future disasters. The community identified several key areas for improvement, including infrastructure enhancements, economic development initiatives, disaster preparedness measures, and effective compensation and housing solutions. These strategies aim to enhance the community's resilience and capacity to cope with similar incidents in the future.

4.6.1 Infrastructure Improvements

Participants underscored the necessity for enhancing local infrastructure to minimise the impact of future flooding.

One participant articulated the need for river defense structures and river dredging. She suggested:

> *Personally, I think if there can be a provision of river defense along the banks of the water like how there is a sea defense. It will help the community in the incident of future spillages. Because, on normal days where the river gets very full, it washes away the sand at the bank of the river and causing it to weaken. Also, VRA is supposed to be dredging the river all the time because the river has become so shallow. If they had dredged before this, I am not sure the water would have affected us so much. I believe the dredging will help.* (Female, 56years, FGD)

Additionally, another participant proposed an idea for flood mitigation based on his observations of natural water pathways. He noted,

> *I have seen that where the water passed before coming to the town has always been its path, and it is consistently between two hills. This pattern has been observed over many years, and I believe it is a natural funneling point for the water. So, if the government could construct a blockade or a water retention wall for the water in between the hills, it will help*

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a lot by stopping the water from entering into the town or, better still, reduce the strength of the flow, thereby minimising the risk of flooding and damage to properties. (Male, 42 years, FGD)

A key informant emphasised the necessity of regular river maintenance, stating,

If the river is dredged regularly, it can hold more water and reduce the chances of flooding. Sand mining along the riverbank needs to stop because it weakens the banks and makes flooding worse. At times, when you realise the number of tipper trucks that fetch sand from the river even in just a day, you will conclude that sand mining needs to be stopped or reduced. Also, the agency in charge of building permits should make sure people don't build anyhow. The communities or towns that resides at river banks should be planned very well in the sense that, they know where the next spillage or the next overflow will get to and place buffers there. (Male, 33 years, IDI)

The emphasis on river defenses, blockades, and regular dredging reflects a proactive approach to disaster preparedness, demonstrating the community's desire for sustainable solutions to safeguard their homes and livelihoods.

4.6.2 Economic Development

To foster sustainable livelihoods, participants advocated for the revival of local agriculture and the re-establishment of businesses. Their perspectives reflected a deep understanding of the challenges faced and a collective desire to rebuild and strengthen their economic foundations.

One participant articulated the urgent need for governmental support in the form of compensation, stating,

What I am expecting from the government is that, compensation should be given to those who have lost their businesses to the flood. Even if the compensation has to do with the items we used to sell or the tools we use to work, it will help us bounce back in our lives. For

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instance, I have a young nephew who had a big cat fishpond and was supposed to come and harvest on Thursday, but he lost it all on Tuesday. He cannot go with three hundred cedis after losing those fishes. I also lost a fish farm. Fish feed does not come cheap and after doing all that, just two days to sell and make some money, everything left. So, such people need to be compensated and the government could make provisions for building back those fish ponds in a more secured way. (Female, 55years, FGD)

A participant offered a broader vision for economic revitalisation through industrial development. He remarked:

Setting up small factories here could create jobs and provide income for a lot of people. Since our traditional leaders know the hilly side of our lands, they could give out or sell them to the government for the construction of some good factories in Mepe. In that case, even when farming and fishing are affected by floods, there could still be jobs. Also, there should be some vocational and technical like masonry, beading, tailoring, carpentry, mechanics etc. training for the youth so that, they can survive wherever they find themselves. (Male, 59years, FGD)

A key informant emphasised the importance of modernising agricultural practices to enhance productivity as well as the introduction of educational infrastructures. She stated;

If we had modern farming equipment, we could improve our yields and be better prepared for any future crises. Also, the lands should be ploughed and seedlings should be given to the victims by the government. Aside that, dredging of the river frequently will help a lot. I think there should be more educational infrastructures like Nurses training, teacher training and so on. Also, some of the women are business women so if the government can give them some soft loans so they can start selling things like clothing, food stuffs, etc. I think it will also help them to come back to their normal state. (Female, 43years, IDI)

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The emphasis on compensation, industrial development, and agricultural modernisation reflected a holistic approach to rebuilding the community's economic landscape. Participants are not merely seeking to return to their previous states but are advocating for a more resilient and diversified economy that can withstand future challenges, ultimately fostering a stronger, more sustainable community in Mepe.

4.6.3 Disaster Preparedness

Participants stressed the importance of effective disaster preparedness measures, advocating for clearer communication and training to ensure the community is better equipped to respond to future crises. Their insights reflected a collective understanding that proactive measures are essential in mitigating the impacts of disasters.

One participant emphasised the necessity of timely information and obedience from victims regarding impending disasters. She stated;

> *I think the community should be well informed about the next spillage. The authorities should inform us earlier about the dates for the spillage and, the extent to which it may affect communities like Mepe, Sokpoe, Sogakope, among others that are residing at the banks of the river. To add to that, I will say we the victims did not abide by the information that was given to us. All we have to do is relocate next time if we are asked to and also pay attention to our leaders. Also, VRA officials are specifically trained on their jobs and I am sure they study the rise and fall of the water and climate changes. So, in that case, they should be opening the water in bits if they realise the water is more than enough.* (Female, 23years, FGD)

A participant expanded on the idea of effective communication by stressing the importance of comprehensive education. He remarked;

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> *My sister, there should be proper education and it must be done in various ways so that everyone can understand. For instance, sign posts could be mounted at various places, such as near the river, public gathering areas, and at the safe haven. These sign posts should display clear messages and visual warnings about the risks of spillage and the measures to take. Furthermore, facilities at the safe havens should be equipped with clean water, sanitation, and first aid kits, so that in the event of a spillage, we won't have to suffer when we go there. Also, these safe havens should be clearly marked and easily accessible, with trained people to provide assistance and guidance during emergencies.* (Male, 35years, FGD)

A key informant highlighted the importance of regular disaster simulations. He remarked,

> *As this thing happened, it has opened the community members' eyes. The community should form a group of people who have an idea on this spillage where once awhile, they would meet to review what is happening around the community. They can even be communicating with VRA to know if the water is coming up and those people will be like voices in the community. Also, the simulation exercise should be done more often and they should take those engagements seriously. And aside from the stakeholders that normally attend the meeting yearly, the exercise should involve the whole community. Things should be explained clearly so that everyone knows how to react when the real thing happens.* (Male, 75years, IDI)

The emphasis on timely communication, diverse educational strategies, and regular practice highlighted a proactive approach to disaster management. Participants are advocating for a comprehensive framework that not only prepares them for potential disasters but also enhances their overall safety and security, ultimately fostering a more resilient community in Mepe.

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4.6.4 Compensation and Housing

Participants expressed a strong need for immediate compensation and housing solutions for those affected by the flooding, highlighting the urgency of these issues in the recovery process.

A participant articulated the challenges associated with finding suitable land and building back their homes and businesses, stating;

> *Our Settlement in Mepe is on a low land and it's only a few people who reside in the hilly areas. Although land is very expensive now as GTP and you won't even get some to buy, it will be better for all those residing on low lands to move to higher grounds with the help of the government, our chiefs, and land owners. As for our houses, I am not sure we can get anyone to build it back for us but, if we could be helped with some funds, while we add up to build the house, it would help a lot. After that, provisions in form of cash and working tools should be made for us. But in all, my prayer is that; God should give us strength so that everyone can go back to the work they used to do before the spillage.* (Female, 44years, FGD)

A participant echoed this sentiment by emphasising the necessity of rebuilding homes. He stated;

> *What I am expecting from the government is that, our collapsed structures should be built back and we heard the government has acquired land to build the houses back for us. This is very necessary. After the building, they must also give us some seed money to start businesses with. Back in 1963 when there was a spillage, one community around Afram Plains was affected and those people were relocated and till today, they are being paid monthly stipends and they don't even pay light bills, so we must also be paid monthly stipends and given the same treatment as those other people to sustain us.* (Male, 61years, IDI)

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A key informant emphasised the significance of compensation in facilitating recovery. She remarked;

> *People need compensation to rebuild their lives. Without it, recovery will be very slow. Permanent housing is crucial. If we can build stronger homes, they will be better able to withstand future floods. They should support those victims who are making efforts to renovate their house with their own money; people have to floor the whole house and its money. The government can let engineers come and check victim's house and do renovations for them. Also, some people are business men and women but the water flooded their businesses; store, container, etc. they all need to be supported in some ways*. (Female, 56years, IDI)

Overall, the strategies outlined by participants reflected a comprehensive approach to reducing the consequences of future disasters, focusing on infrastructure improvements, economic resilience, preparedness, and support for affected individuals.

4.7 DISCUSSION OF FINDINGS

This study sought to explore the experiences of victims of the Akosombo Dam spillage, focusing on the community of Mepe in the Volta Region of Ghana. This section will discuss the findings of the study. The findings will be discussed in line with the objectives of the study which are, to explore the pre-spillage lives of victims, to ascertain the current living conditions of victims, to identify the coping mechanisms utilised by victims and to find out from victims, ways to reduce the impact of future Akosombo Dam spillages on the people of Mepe, Volta Region, Ghana. The findings would be compared to literature to reveal the similarities and differences.

4.7.1 Pre-Disaster Lives of Victims

The study first sought to explore the pre-spillage lives of victims of the Akosombo Dam spillage, by examining their socio-economic structures, livelihoods, and daily interactions with the river

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ecosystem. The study found that, prior to the spillage, the Mepe community's livelihoods were tied to the river ecosystem. Fishing and farming along the riverbanks served as the primary sources of income, with many households depending on these activities for their sustenance. Beyond economic sustenance, the river played a central role in the community's social and cultural life, influencing traditional practices, communal gatherings, and rituals.

This reliance on the river meant that any disruption, particularly one as severe as the spillage, would have far-reaching consequences. These findings highlighted the vulnerability of river-dependent communities to ecological disruptions. The destruction of fishing zones and farmlands not only undermines household incomes but also threatened food security and the broader economic stability of the affected area. The loss of these traditional livelihoods also contributed to social dislocation, as families were forced to seek alternative means of survival, often in unfamiliar environments with limited resources.

This socio-economic structure aligned with broader observations in literature regarding the dependence of communities on river systems. For instance, Addo (2012) and Yeboah et al. (2022) underscore that communities living along water bodies often have socio-economic structures reliant on these ecosystems. In such settings, disruptions like flooding or infrastructural projects that alter river systems have far-reaching effects on both livelihoods and the broader social fabric. The Mepe community's connection to the river for both economic sustenance and cultural activities mirrors findings from Yeboah et al. (2022), who highlight the centrality of river systems in shaping the daily lives of riverside communities.

Social and cultural activities were integral to community life in Mepe, where gatherings and festivals were often centered around the river. This was disrupted by the spillage, similar to the socio-cultural impacts observed by Yeboah et al. (2022) in communities that experience displacement or environmental disruption. In such cases, the loss of traditional livelihoods is not

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just economic but social and cultural, often leading to a breakdown of community cohesion, as rituals and gatherings may become difficult to sustain.

One key finding from this study was the limited effectiveness of preparedness measures despite annual warnings of potential spillage. While the community had been exposed to previous warnings, there was a lack of serious appreciation of the threats posed by the dam spillage. This highlighted a disconnect between awareness and effective disaster preparedness, which Ralph-Imoniruwe and Idama (2023) also found in their research. They assert that while communities may have knowledge of potential disasters, it does not always translate into effective action, particularly in cases where past threats have not materialised at severe levels. The Mepe community's complacency is reflective of this broader trend, where familiarity with annual spillages did not result in adequate preparedness measures, leaving the community vulnerable when the disaster struck at a more severe scale.

Further compounding this issue is the challenge of integrating traditional knowledge with modern disaster management strategies, a concern Birkmann (2006) raised. In Mepe, although the community had traditional ways of responding to river dynamics, these practices were not adequately combined with more modern preparedness measures. This disconnect often results in communities not fully utilising either system to mitigate the risks effectively, as evidenced in the Mepe case where local knowledge and governmental strategies failed to align.

Another aspect of the community's pre-disaster life was the participation in meetings and conferences related to emergency preparedness. While these gatherings were meant to inform and prepare the community for possible emergencies, the dissemination of information remained largely ineffective. Information flow through local authorities was often limited or did not reach all segments of the population in a timely manner, reducing the overall impact of these preparedness efforts. Antwi-Agyei et al. (2018) emphasise the importance of aligning community engagement with local cultural practices to ensure that messages about disaster preparedness are effectively

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communicated and acted upon. The lack of culturally relevant messaging in Mepe likely contributed to the community's limited response.

This study also revealed the geographical vulnerabilities faced by the community, as the majority of residents occupy low-lying land, makes them particularly at risk during flood events. The reliance on mud for construction, alongside the presence of inadequately built block structures, points to a systemic issue of insufficient building standards and a lack of resources for proper housing. Participants narratives collectively revealed that the community's settlement patterns, coupled with unauthorised building practices, significantly increased their vulnerability to the spillage. Many homes were structurally weak and situated in flood-prone areas, exacerbating the impact of the disaster.

This finding is in line with the findings of Hedidor et al. (2016) study which discussed the absence of systematic Spatial Planning (SP) in Mepe, which further compounds the difficulties faced by the community. Hedidor et al. (2016) unveiled an aspect of Mepe's landscape where unauthorised structures, as discussed in their study, did not only pose hygiene challenges but becomes potential obstacles to essential fire escape routes. The construction of homes in waterways in Mepe without the requisite permits not only violates zoning laws but also jeopardises the entire community's safety. This disregard for proper building protocols indicates a broader issue of governance and community planning.

Further, the role of grassroots resilience, as discussed by Dinye and Amoako (2023), became evident in Mepe, though only after the disaster. While the community showed significant strength in rallying together post-disaster, the pre-disaster stage revealed vulnerabilities in how grassroots resilience and local knowledge could have been better harnessed. A stronger, pre-emptive reliance on grassroots knowledge, combined with external support systems, could have enhanced their readiness and response to the disaster. This suggests that while grassroots resilience plays a crucial role in

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recovery, it must be actively integrated into pre-disaster strategies to mitigate impacts more effectively.

The findings in Mepe reflect a broader pattern observed in disaster-prone communities; economic reliance on natural systems, underdeveloped preparedness measures, and gaps in the integration of traditional and modern disaster knowledge. While the community had structures in place for preparedness, the disconnect between awareness and action underscores the need for more robust and culturally integrated disaster preparedness programs, as advocated by both Antwi-Agyei et al. (2018) and Birkmann (2006). These findings demonstrate the need for national disaster policy to prioritise early warning communication systems tailored to rural, river-dependent communities. Policies must ensure that warnings are not just disseminated but also acted upon through community drills, livelihood protection measures, and integration of local knowledge into formal disaster frameworks. For practice, agencies such as NADMO should strengthen collaboration with traditional leaders to embed cultural systems of preparedness into official disaster strategies.

4.7.2 Current Living Conditions of Victims

The study in its second objective aimed to ascertain the current living conditions of victims of the Dam spillage in Mepe. This objective was critical in understanding the extent of the damage caused by the disaster and the ongoing struggles faced by the affected population. The findings revealed that the Mepe community has suffered losses due to the spillage. Many residents lost their homes, personal belongings, and social infrastructure, leaving them in harsh living conditions. Families were forced to seek temporary shelter in schools, churches, and makeshift structures, with limited access to clean water, electricity, and sanitation facilities.

The disruption extended beyond housing, as economic activities were severely impacted. Fishing and farming, which once sustained the majority of households, were largely halted due to the destruction of farmlands and contamination of water sources. Without their traditional sources of

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income, many residents struggled to afford basic necessities, deepening their socio-economic vulnerabilities. The physical and economic toll, the disaster disrupted essential services such as education and healthcare. Schools were closed, and many children were unable to continue their education due to displacement and lack of resources.

In addition, healthcare services were strained as health centers struggled to meet the increased demand for medical attention, especially for waterborne diseases and other health complications resulting from poor living conditions. Social structures and cultural practices, which are crucial for community resilience, were also affected. Displacement fragmented families and social networks, leading to a loss of communal support systems that once helped individuals cope with economic and emotional hardships.

These findings resonate with Mendis et al. (2023), who similarly identified significant destruction in post-disaster contexts, where communities face profound disruptions in their daily lives, often accompanied by food shortages and a lack of economic resources. In Mepe, the disaster not only affected physical structures but also had a cascading impact on livelihoods, as homes and businesses were washed away, deepening the community's socio-economic vulnerabilities. Yeboah et al. (2022) also discuss how disasters, especially when linked to displacement or resettlement, tend to exacerbate these vulnerabilities, reinforcing the long-term challenges that communities like Mepe face in their recovery efforts.

The damage to infrastructure in Mepe also led to widespread disruptions in essential services such as education and health care, with schools being forced to close and makeshift arrangements being made for children. Herlianto (2023) observed similar challenges in other disaster-stricken areas, noting that early recovery efforts often prioritise the physical reconstruction of homes and roads, while neglecting essential services such as education, health, and sanitation. This reflects the experience of the Mepe community, where the focus on rebuilding infrastructure has, in many cases,

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overlooked the need to restore the social systems that support daily life, particularly for vulnerable groups such as children.

Yang et al. (2023) further discuss how inadequate livelihood recovery strategies can impede a community's ability to bounce back after a disaster. In Mepe, the disruption of farming and fishing; two primary economic activities, was devastating, leaving many without their traditional sources of income. This gap in livelihood recovery underscores the need for more holistic recovery strategies that prioritise both economic restoration and the rebuilding of essential services, as highlighted by the community's demands for compensation and modern agricultural tools to restore their livelihoods.

In addition to economic and infrastructural damage, the spillage also disrupted the social and cultural fabric of Mepe. Social and cultural activities, which form an essential part of the community's identity and cohesion, were significantly affected. This aligns with Abeka et al. (2019), who emphasise the socio-cultural disintegration that often follows disasters, particularly when communities are forced to relocate or adapt to radically altered environments. For Mepe, these disruptions compounded the psychological toll of the disaster, as people not only lost their homes and livelihoods but also experienced the breakdown of traditional social networks and communal activities that foster resilience and support.

Birkmann's (2006) framework, which emphasises the dynamic nature of vulnerability, is particularly relevant in understanding the evolving risks faced by the Mepe community. As environmental and population changes occur, so too does the community's exposure to future disasters. The ongoing infrastructure development and shifting population dynamics in Mepe suggest that vulnerabilities are not static but are continually shaped by both human and environmental factors. This dynamic vulnerability was evident in the increased devastation brought

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about by the population and infrastructure changes over the years, as newer, less disaster-resistant structures were built, leaving more people exposed to the risks of flooding.

Overall, the findings underscore the complex interplay between physical damage, socio-economic vulnerabilities, and the disruption of social and cultural life in Mepe. Theoretical insights from Mendis et al. (2023), Birkmann (2006), and Abeka et al. (2019) help frame these findings within a broader understanding of disaster recovery, highlighting the need for multi-faceted and inclusive recovery strategies that go beyond physical reconstruction to address the full spectrum of community needs. The harsh living conditions underscore the necessity for post-disaster recovery policies that extend beyond physical reconstruction. Policy frameworks must address the restoration of education, health care, and social systems alongside infrastructure. For practice, relief programmes should incorporate long-term livelihood support (e.g., agricultural inputs, small-business grants) to reduce prolonged dependence on aid.

4.7.3 Coping Mechanisms Utilised by Victims

This third objective of the study sought to identify the coping mechanisms utilised by victims in Mepe following the Dam spillage. Understanding how affected individuals and the broader community responded to the disaster is essential in evaluating the resilience of the community and the effectiveness of existing support structures. The study focused on both immediate survival strategies and long-term adaptation measures, shedding light on the strengths and limitations of local and external support systems in disaster recovery.

The findings revealed that Mepe residents relied primarily on local support networks and relief aid to cope with the aftermath of the disaster. In the immediate response phase, affected individuals sought refuge with extended family members, friends, and community-based organisations, highlighting the importance of social capital in times of crisis. Many residents depended on food aid and temporary shelters provided by non-governmental organisations, local authorities, and

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religious groups. These informal and formal support mechanisms helped mitigate the initial impact of displacement, although the adequacy and sustainability of these interventions varied.

The disruption of education due to school closures prompted community-led efforts to establish temporary learning spaces for affected students. While these efforts demonstrated the adaptability of local systems in safeguarding children's education, they also exposed the limitations of grassroots interventions in the absence of sustained governmental or institutional support. Similar challenges were observed in healthcare access, as local health facilities struggled to manage the increased demand for medical attention. Psychological distress among victims, including trauma and anxiety, was prevalent, prompting interventions by relief agencies to provide counseling services. However, these services were often insufficient, given the scale of the crisis and the prolonged uncertainty surrounding rehabilitation and resettlement.

The study's findings on the Mepe community's reliance on local support networks and relief items during the Akosombo Dam spillage align with the broader literature on disaster resilience. As highlighted by Dinye & Amoako (2023), grassroots resilience and local support systems play a crucial role in disaster response, especially in regions where formal infrastructure may be inadequate or slow to respond. In Mepe, individuals relied heavily on local networks for immediate assistance, including food and shelter, mirroring the experiences of other communities where informal and community-based support is a primary buffer against the initial shocks of disasters. Addo & Danso (2017) emphasise the role of both formal and informal networks in such situations, noting that these support systems can be the difference between survival and prolonged hardship.

Temporary educational arrangements were made in Mepe to mitigate the impact on students whose schools were affected by the flooding. This highlights the adaptability of local systems in responding to the immediate needs of vulnerable groups, such as children. However, these temporary solutions also expose the limitations of grassroots efforts when not fully supported by external agencies or

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more formalised recovery plans. The findings of this study resonate with the emphasis placed by Mendis et al. (2023) on the importance of multidimensional recovery approaches in post-disaster contexts, where physical, social, and psychological recovery must occur simultaneously to ensure sustainable recovery.

In terms of health and psychological support, the establishment of medical centers and the provision of psychological services in Mepe was a critical response to the disaster. The emotional and psychological toll of disasters, as discussed by Herlianto (2023), can often be as devastating as the physical damage, with long-term implications for individual and community well-being. The collaboration between local agencies such as the Volta River Authority (VRA) and the National Disaster Management Organisation (NADMO), alongside external organisations, was instrumental in providing these necessary services. This collaboration mirrors the findings of Mendis et al. (2023), who argue that post-disaster recovery must involve a coordinated effort between local and external actors to address the full scope of challenges that arise in the aftermath of a disaster.

The effective relief efforts in Mepe, facilitated through collaboration between stakeholders such as the VRA, NADMO, and other agencies, also reflect the importance of coordinated disaster management strategies. Abeka et al. (2019) emphasised the critical role that such stakeholder collaboration plays in ensuring effective relief distribution and the management of resources in post-disaster settings. However, while the collaboration in Mepe was largely effective in the immediate aftermath, participants in this study also highlighted the need for improved communication and preparedness strategies for future disasters. This aligns with the literature, particularly the work of Addo & Danso (2017), which underscores the importance of clear communication channels and well-established preparedness frameworks to mitigate the impact of future disasters.

Overall, the findings from Mepe reinforce the centrality of local support networks, the role of collaboration between agencies, and the critical need for more robust preparedness and

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communication strategies. These elements are essential for effective disaster management, and the experiences of the Mepe community provide valuable insights into the complex interplay of local and external efforts in post-disaster recovery. Theoretical perspectives from Dinye & Amoako (2023), Herlianto (2023), and Mendis et al. (2023) further contextualise these findings, underscoring the importance of an integrated approach that addresses the multidimensional challenges of disaster recovery while building long-term resilience. The reliance on local networks points to the need for policies that formally recognise and strengthen grassroots resilience. Practice-wise, NGOs and state agencies must design interventions that build on existing social support systems instead of replacing them. This would improve sustainability and community ownership of disaster recovery programmes.

4.7.4 Strategies to Reduce the Future Consequences of Future Disaster

The study sought to explore the perspectives of victims in Mepe on strategies to reduce the impact of future Akosombo Dam spillages. Given the community's experience with the recent disaster, their insights are crucial in identifying proactive measures that can enhance resilience and minimise future risks. The study aimed to understand the specific interventions that residents believe would best protect their livelihoods, infrastructure, and overall well-being in the face of potential future disasters.

Findings from the study indicated that community members advocated for improvements in infrastructure, economic development, and enhanced disaster preparedness as key strategies for mitigating future spillages. A primary concern raised was the need for physical protective measures, such as constructing embankments and dredging the river to reduce the risk of severe flooding. Given Mepe's geographical location and dependence on the river for livelihood activities, these infrastructure improvements were seen as critical for long-term disaster prevention. Participants also emphasised the importance of integrating environmental management strategies into community planning, such as afforestation along the riverbanks to reduce erosion and flooding risks.

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Economic resilience was a key theme, with victims emphasising financial compensation for affected households and diversified income sources. The study found that many residents recognised the vulnerability of depending solely on fishing and farming, which are highly susceptible to environmental disruptions. As a result, participants proposed the establishment of small-scale industries and vocational training programs to provide alternative employment opportunities. These suggestions reflect a broader awareness of the necessity for economic diversification to build long-term resilience.

Additionally, disaster preparedness and response measures emerged as a concern among community members. Participants stressed the importance of early warning systems, improved communication between authorities and residents, and regular disaster drills to ensure that people are better equipped to respond to emergencies. There was also a call for more extensive government and institutional involvement in community disaster education and preparedness training, particularly in equipping local leaders with the necessary skills to coordinate relief efforts efficiently.

These findings align with existing literature on disaster risk reduction, where Yang et al. (2023) discuss similar strategies for integrating resilience and sustainability into post-disaster recovery efforts, underscoring the importance of robust infrastructure as a foundational element for effective disaster mitigation. The call for infrastructure improvements in Mepe is particularly salient given the community's reliance on the river ecosystem for livelihoods. Participants suggested implementing protective barriers along the riverbanks and regularly dredging the river to prevent future flooding. These recommendations are echoed in the literature, where Yeboah et al. (2022) emphasise the systematic integration of environmental concerns into resettlement and urban planning processes. Such integration is vital for communities prone to flooding, as it addresses both immediate risks and long-term sustainability challenges.

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Economic development emerged as another key theme, with participants advocating for new economic opportunities and compensation for those affected by the spillage. This aligns with Addo's (2012) argument that sustainable solutions must include economic diversification to enhance community resilience. Yang et al. (2023) further stress the necessity of long-term stability through economic diversification, suggesting that communities need to move beyond single-source livelihoods to mitigate the vulnerabilities exacerbated by disasters. The Mepe community's suggestions for establishing small factories and improving agricultural practices exemplify a proactive approach to creating diverse income streams, which can be crucial during times of crisis.

Moreover, the need for enhanced disaster preparedness was a recurring theme in the study findings. Participants advocated for clearer communication, better training, and more frequent disaster simulations. This need aligns with the findings of other researchers, including Abeka et al. (2019), who highlight the importance of community engagement and preparedness education in disaster risk reduction. Effective communication strategies and educational initiatives can significantly enhance community resilience, allowing residents to respond more effectively to future threats.

In summary, the strategies proposed by the Mepe community reflect a multifaceted approach to disaster risk management, emphasising the need for infrastructure improvements, economic development, and enhanced preparedness. These findings resonate with the broader literature, indicating that a holistic and integrated strategy is essential for reducing vulnerabilities and enhancing resilience in disaster-prone areas. Community calls for embankments, dredging, and afforestation signal the urgency for disaster risk reduction (DRR) policies that combine infrastructure protection with ecological restoration. Economic diversification must also feature prominently in national disaster management plans, reducing overreliance on farming and fishing. In practice, NADMO and the Ministry of Local Government should work with District Assemblies to integrate disaster preparedness into spatial planning, enforce building codes in flood-prone areas, and support vocational training for alternative livelihoods.

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4.8 Conclusion

This chapter presented and discussed the study's findings on the impact of the Akosombo Dam spillage on Mepe. It highlighted the community's pre-spillage economic and social stability, the extensive disruptions caused by the disaster, and the resilience shown in the aftermath. However, gaps in preparedness underscored the need for stronger, culturally sensitive strategies. The next chapter will summarise these findings and provide recommendations to enhance future disaster resilience.



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CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This final chapter presents a summary of the study's findings, conclusions and recommendations to enhance resilience and preparedness for future spillage. Implications of the study and suggestions for future research are also discussed.

5.2 Summary of Findings

The study on the Akosombo Dam spillage in Mepe provides a comprehensive exploration of the pre- and post-spillage conditions faced by the affected community, focusing on their coping mechanisms and strategies for mitigating the impact of future disasters. Before the spillage, Mepe's economy was relatively stable, primarily relying on farming and fishing, which were supported by robust social and cultural practices. However, the findings revealed that preparedness efforts were inadequate, largely due to a limited understanding of disaster risks and an underestimation of potential threats. While community members did engage in emergency meetings, the influence of cultural norms on their approach to risk management underscored the need for culturally integrated disaster preparedness strategies.

The spillage itself resulted in extensive destruction, impacting homes, property, and infrastructure. This devastation led to significant disruptions in daily life, characterised by food shortages and economic hardships. The damage to infrastructure also severely affected essential services and education, resulting in school closures and necessitating makeshift arrangements for students. The emotional and psychological toll on the community was palpable, as social and cultural activities suffered greatly. Notably, the impact of the 2024 spillage was more severe than that of the 1963 event, primarily due to increased population density and changes in local infrastructure.

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In the immediate aftermath of the disaster, local support networks and relief items addressed urgent needs. Temporary educational arrangements and external aid played critical roles in mitigating the educational disruptions faced by students. Additionally, medical centers and psychological services emerged as vital resources, supporting the emotional and psychological recovery of those affected by the spillage. The collaboration among the Volta River Authority (VRA), the National Disaster Management Organisation (NADMO), and other stakeholders proved effective; however, the study highlighted an urgent need for improved communication and enhanced disaster preparedness.

As the community looks to the future, several strategies for reducing the consequences of potential disasters have been identified. These include improving infrastructure through regular river dredging and halting sand mining, both of which are essential for preventing future flooding. Economic development initiatives, particularly the adoption of modern agricultural practices and the establishment of new industries, are also crucial for fostering resilience. Furthermore, long-term recovery will depend on providing compensation and permanent housing for those affected, along with creating sustainable economic opportunities. To ensure better preparedness for future crises, enhanced disaster preparedness measures, including clearer and more frequent simulation exercises, will be vital for equipping the community to respond effectively to any potential threats.

5.3 Conclusion

The study concludes that the Akosombo Dam spillage had profound and far-reaching effects on Mepe, significantly disrupting the community's socio-economic stability, cultural practices, and daily routines. The pre-spillage period was marked by inadequate preparedness and limited awareness among residents, resulting in ineffective response mechanisms when the disaster struck. Immediate impacts were severe, with widespread infrastructure damage, loss of homes and livelihoods, and a breakdown of social structures and cultural norms. The spillage not only displaced residents but also disrupted essential services, such as education and healthcare, creating a long-term strain on the community's overall well-being.

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In response to these challenges, the community demonstrated resilience through various coping mechanisms, including the mobilisation of local support networks and collaboration with stakeholders like the Volta River Authority (VRA) and the National Disaster Management Organisation (NADMO). These efforts, although crucial, were not sufficient to fully mitigate the impacts of the disaster, underscoring the gaps in existing disaster management and response strategies. The reliance on external assistance highlighted the community's need for more robust self-reliant strategies and sustainable support systems to enhance their capacity to withstand future disasters.

The study emphasises the critical need for improved disaster preparedness and response, recommending enhanced communication strategies, infrastructure development, and economic diversification. Integrating local knowledge and cultural practices into disaster management plans is essential to create more effective and resilient responses. By promoting sustainable development and empowering the community, the study suggests that future disaster impacts can be minimised, and Mepe can better recover and thrive in the face of such adversities.

5.4 Recommendations

The findings of the study on the Akosombo Dam spillage in Mepe have underscored the urgent need for targeted interventions to restore and enhance the community's resilience. To address the significant impacts on the community's established economic activities and cultural practices, the study recommends that Social workers and National Disaster Management Organisation (NADMO), should implement economic revitalisation programs alongside initiatives aimed at preserving cultural heritage. Such programs should focus on supporting local agriculture and fishing, which are vital to the community's livelihood. Additionally, reviving cultural festivals that were disrupted by the spillage will help strengthen community identity and cohesion, fostering a sense of belonging and support among residents.

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A finding of the study was the limited awareness among community members regarding disaster risks, which contributed to their increased vulnerability. To mitigate this issue, it is essential that National Disaster Management Organisation (NADMO) and Volta River Authority (VRA) enhance community education and awareness programs focused on disaster preparedness. These programs should include regular, comprehensive training on emergency procedures and effective communication strategies to ensure that residents are well-informed about potential risks. Improved simulation exercises are also necessary, allowing community members to practice their response to disasters in a controlled environment, thereby boosting their confidence and preparedness for future incidents.

The destruction of infrastructure and property due to the spillage resulted in severe disruptions to daily life, economic hardships, and limited access to essential services. In light of this, National Disaster Management Organisation (NADMO) and Volta River Authority (VRA) should prioritise infrastructure reconstruction and development is crucial. Efforts should focus on repairing damaged roads, restoring power supplies, and rebuilding public buildings that serve as critical resources for the community. Furthermore, establishing contingency plans for maintaining essential services during emergencies is vital, as is providing financial aid and temporary housing for those affected by the disaster. These measures will not only facilitate immediate recovery but also contribute to the long-term resilience of the community.

Finally, the study highlighted the importance of local support networks and external aid in managing the aftermath of disasters. Social workers should strengthen these local support networks for enhancing the community's capacity to respond effectively to future crises. Fostering collaboration between community organisations, government agencies, and non-governmental organisations (NGOs) will create a more robust framework for emergency response and recovery. Developing clear protocols for cooperation during disasters will empower the community and ensure a swift, coordinated response when faced with future challenges.

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5.5 Implications for Social Work Practice

The findings of the study on the Akosombo Dam spillage in Mepe have significant implications for social work practice. Social workers play a crucial role in advocating for policies that prioritise disaster preparedness and infrastructure development. This advocacy is essential in ensuring that government and non-governmental organisations allocate resources toward proactive measures that can mitigate the impact of future disasters. By influencing policy at local and national levels, social workers can help create frameworks that facilitate timely and effective responses to emergencies, including compensation for affected communities to aid their recovery.

In addition to advocacy, social workers can facilitate collaboration between the National Disaster Management Organisation (NADMO) and the Volta River Authority (VRA). By designing and delivering educational programs that focus on disaster awareness and preparedness, social workers can help ensure that vital information reaches community members in an accessible and culturally sensitive manner. These programs should be tailored to the specific needs of the community, considering local customs and communication styles. This approach not only enhances awareness but also empowers residents to take proactive measures in their disaster preparedness efforts.

Furthermore, social workers can advocate for infrastructure reconstruction projects while coordinating support services for individuals and families affected by infrastructure damage. They can work closely with community leaders and government agencies to identify the most pressing needs and prioritise the restoration of essential services. This coordination is critical in ensuring that recovery efforts are holistic and address the multifaceted challenges faced by the community. By connecting those affected with appropriate resources and support services, social workers can help facilitate a smoother transition to post-disaster recovery.

Another essential aspect of social work practice in this context is the establishment and maintenance of local support networks. Social workers can foster collaboration among stakeholders, including

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community organisations, government agencies, and NGOs, to create a cohesive support system for individuals and families impacted by disasters. Effective communication is key to ensuring that community needs are accurately represented and addressed in recovery efforts. Social workers can serve as liaisons between the community and external organisations, ensuring that residents have a voice in the recovery process and that their unique needs are met.



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APPENDIXES

APPENDIX 1

UNIVERSITY OF GHANA
ETHICS COMMITTEE FOR THE HUMANITIES (ECH)
P. O. Box LG 74, Legon, Accra, Ghana

My Ref. No: ECH 142/ 23-24

February 15, 2024

Confidence Glover
Department of Social Work
University of Ghana
Legon

ETHICAL CLEARANCE
(ECH 142/23-24)

The Ethics Committee for the Humanities (ECH) conducted a full-board review and approved your protocol titled:

UNDERSTANDING THE LIVES OF VICTIMS OF THE AKOSOMBO DAM SPILLAGE: THE CASE OF MEPE IN THE VOLTA REGION OF GHANA

PRINCIPAL INVESTIGATOR: **CONFIDENCE GLOVER**

Please note that the final review report must be submitted to the Committee at the completion of the study. Your research records may be audited at any time during or after the implementation. Any modification of this research project must be submitted to ECH for review and approval prior to implementation.

Please report all serious adverse events related to this study to ECH within seven (7) days verbally and in writing within fourteen (14) days.

This certificate is valid until February 14, 2025. You are required to submit annual reports for continuing review.

Please accept my congratulations.

Yours Sincerely,

Professor Akosua K. Darkwah
ECH Vice-Chair

Cc: Dr. Augustina Naami, Department of Social Work. UG
Professor Mavis Dako-Gyeke, Department of Social Work, UG
Dr. Vyda Mamley Hervie Department of Social Work, UG

Tel: +233-303933866 Email: ech@ug.edu.gh

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APPENDIX 2

INTERVIEW GUIDE FOR PERSONS AFFECTED BY THE AKOSOMBO DAM SPILLAGE IN MEPE.

My name is Confidence Glover. I am a final year Master of Philosophy student from the Department of Social Work at the University of Ghana, Legon. I am conducting a research on the topic: "Understanding the lives of victims of the Akosombo dam spillage: The case of Mepe in the Volta region of Ghana" in partial fulfillment of a Master of Philosophy Degree in Social Work. Your contributions will be helpful in understanding the topic under study. Information gathered will be used for academic purposes only and will be kept confidential. Responses cannot be traced back to you in anyway as your name will not be attached to your input. Also your participation in the study is voluntary and you may opt out of the study at any point.

Demographic Features

Name

Age: 18-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 61-70 ☐ 71+ ☐

Gender: Male ☐ Female ☐

How long have you lived in Mepe? 0-5 ☐ 6-10 ☐ 11+ ☐

Source of livelihood: Employed ☐ Unemployed ☐ Others ☐

Relationship status: Single ☐ Married ☐ Separated ☐

Number of people in your household: 0-5 ☐ 6-10 ☐ 11+ ☐

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Objective 1: Exploring the Pre-Spillage Lives of Victims.

1. Kindly describe what your life was like in Mepe before the Akosombo Dam spillage incident.
2. How would you characterize your socio-economic conditions of the community before the spillage?
3. Were there any notable events or factors that significantly shaped your daily life in Mepe prior to the spillage?
4. Kindly share insights into your preparedness for potential spillages or disasters before the incident.
5. Did you hear any information about the possibility of the dam spillage and its potential impact on the community? Please explain.
6. How prepared were you regarding the Akosombo Dam's operation and the likelihood of a spillage before it occurred?

Objective 2: Understanding the Post-Disaster Living Conditions

7. Kindly describe how you felt after the spillage.
8. What are the challenges you faced following the Akosombo Dam spillage?
9. How has the spillage affected your home, farm and overall environment?
10. Kindly elaborate on the challenges you are facing in your day-to-day life post-spillage.
11. Reflecting on the spillage incident that occurred approximately 60 years ago, what were the most significant challenges or impacts you faced during that time?

Objective 3: Identifying Coping Mechanisms Utilized by Victims of Disasters

12. How have you coped with the aftermath of the Akosombo Dam spillage?
13. Kindly describe any emotional or psychological coping strategies you relied on?

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14. What role has the community played in helping you cope with the challenges post-spillage?
15. What forms of support did you receive from your family, religious bodies (Church, Mosque etc.), NGOs, philanthropic individuals or organizations and the Government?
16. What would you say about the quality and quantity of the forms of support at you received?
17. Considering your experiences from both the previous spillage 60years ago and the recent spillage, are there similarities or differences in how individuals and the community coped with these events?

Objective 4: Exploring Strategies that Could Be Used to Reduce the Consequences of Future Disasters on the Lives of Persons Affected by Disasters

18. In your opinion, what strategies could be implemented to enhance your life following the spillage?
19. How can you be better prepared for similar incidents in the future?
20. Are there specific interventions or support systems that you believe would contribute to the improvement of your living conditions?

General Question:

21. Are there any additional insights or aspects you feel are crucial for understanding the impact and recovery in Mepe?

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APPENDIX 3
INTERVIEW GUIDE FOR KEY INFORMANTS

My name is Confidence Glover. I am a final year Master of Philosophy student from the Department of Social Work at the University of Ghana, Legon. I am conducting a research on the topic: "Understanding the lives of victims of the Akosombo dam spillage: The case of Mepe in the Volta region of Ghana" in partial fulfillment of a Master of Philosophy Degree in Social Work. Your contributions will be helpful in understanding the topic under study. Information gathered will be used for academic purposes only and will be kept confidential. Responses cannot be traced back to you in anyway as your name will not be attached to your input. Also your participation in the study is voluntary and you may opt out of the study at any point.

Demographic Features

Name

Age: 18-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 61-70 ☐ 71+ ☐

Gender: Male ☐ Female ☐

How long have you worked in Mepe? 0-5 ☐ 6-10 ☐ 11+ ☐

Current Position:

Place of Employment:

Location of Employment:

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General Question

1. Please were you affected by the spillage?
2. Kindly tell me about your life before the Spillage.

Objective 1: Exploring the Pre-Spillage Lives of Victims.

1. Kindly describe what life was like in Mepe before the Akosombo Dam spillage incident.
2. How would you characterize the socio-economic conditions of the community before the spillage?
3. Were there any notable events or factors that significantly shaped daily life in Mepe prior to the spillage?
4. Kindly share insights into the community's preparedness for potential spillages or disasters before the incident.
5. Were there any formal communication channels or community meetings organized by local authorities, NGOs, VRA or other entities to inform residents about the possibility of the dam spillage and its potential impact on the community?
6. How would you describe the level of awareness or knowledge within the community regarding the Akosombo Dam's operation and the likelihood of a spillage before it occurred?

Objective 2: Understanding the Post-Disaster Living Conditions of Victims

7. Kindly describe Mepe following the Akosombo Dam spillage?
8. How has the spillage affected the infrastructure, housing, and overall environment in the community?
9. Kindly elaborate on the challenges residents are facing in their day-to-day lives after the spillage.
10. What changes have occurred in the community's social fabric since the spillage?

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11. Reflecting on the spillage incident that occurred approximately 60 years ago, what were the most significant challenges or impacts Mepe as a community faced during that time?

Objective 3: Identifying Coping Mechanisms Utilized by Victims of Disasters

12. How have the community coped with the aftermath of the Akosombo Dam spillage?
13. Kindly describe any emotional or psychological coping strategies employed by survivors?
14. What role has community support played in helping individuals cope with the challenges post-spillage?
15. Kindly elaborate on the collaboration between VRA and other stakeholders, including government bodies, organizations, and local community leaders, in responding to the spillage??
16. Considering your experiences from both the previous spillage 60years ago and the recent spillage, are there similarities or differences in how the community coped with these events?

Objective 4: Exploring Strategies that Could Be Used to Reduce the Consequences of Future Disasters on the Lives of Persons Affected by Disasters

17. In your opinion, what strategies could be implemented to enhance the lives of Akosombo Dam spillage victims in Mepe?
18. How can the community be better prepared for similar incidents in the future?
19. Are there specific interventions or support systems that you believe would contribute to the overall improvement of living conditions in Mepe?
20. Kindly suggest sustainable strategies for rebuilding and improving the community's resilience in the long term?

General Questions:

21. How would you describe the sense of community in Mepe both before and after the spillage?

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22. Are there any additional insights or aspects you feel are crucial for understanding the impact and recovery in Mepe?

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APPENDIX 4
Photo Voice Guide

Objective 1: Exploring the Pre-Spillage Lives of Victims.

1. **Photograph a significant location or aspect of Mepe that represents the community's life before the Akosombo Dam spillage.** Kindly provide a brief description of why you chose this location or aspect.

2. **Capture images that showcase the socio-economic conditions of Mepe prior to the spillage.** This could include local businesses, communal spaces, or any relevant elements that portray the community's pre-spillage life.

3. **Photograph events or elements that had a notable impact on daily life in Mepe before the spillage.** Kindly describe the significance of these events or elements in shaping the community's pre-spillage experiences.

4. **Capture any signs or symbols that represent the community's preparedness for potential spillages or disasters before the incident.** Kindly explain the meaning or significance of these signs or symbols.

Objective 2: Understanding the Post-Disaster Living Conditions of Victims

5. **Document the current living conditions in Mepe following the Akosombo Dam spillage.** This could include changes in infrastructure, housing, or the overall environment. Provide insights into the challenges residents are facing in their day-to-day lives post-spillage.

6. **Photograph elements that represent the impact of the spillage on the community's social fabric.** This could include community gatherings, interactions, or changes in relationships.

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Objective 3: Identifying Coping Mechanisms Utilized by Victims of Disasters

7. **Capture images that depict how individuals and the community are coping with the aftermath of the Akosombo Dam spillage.** This could include scenes of communal support, emotional expressions, or any visible coping strategies.

8. **Document any community-led initiatives or coping mechanisms that have emerged post-spillage.** Kindly highlight the significance of these initiatives and how they contribute to the community's resilience.

Objective 4: Exploring Strategies that Could Be Used to Reduce the Consequences of Future Disasters on the Lives of Persons Affected by Disasters

9. **Photograph locations or elements that, in your opinion, could be focal points for improvement to enhance the lives of Akosombo Dam spillage victims in Mepe.** Kindly provide a brief description of why these areas or elements are crucial for improvement.

10. **Capture images that represent your vision for the community's preparedness and resilience in the future.** Kindly share any ideas or interventions you believe could contribute to long-term improvement.

