2018

Emergency Management: A Qualitative Study of Flood Disaster Vulnerability in Liberia

Morris Tennesse Koffa
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Morris Koffa

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Mary Bruce, Committee Chairperson,
Public Policy and Administration Faculty

Dr. David Milen, Committee Member,
Public Policy and Administration Faculty

Dr. George Kieh, University Reviewer,
Public Policy and Administration Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

Emergency Management: A Qualitative Study of Flood Disaster Vulnerability in Liberia

By

Morris T. Koffa, Sr.

MSc, American Public University, 2006

MA, American Military University, 2008

BS, University of the District of Columbia, 1994

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration (PPA)

Specialty, Emergency Management

Walden University

July 2018

Abstract

Flood disasters have been a challenge in Liberia for the past 15 years. The result has been hardship for residents, which has created major disruptions to social and economic services. Global warming, poor environmental conditions and weak disaster management policies among other factors are largely blamed for the floods. The conceptual framework for this study was Barton's collective stress theory and Edwards' varied response theory, which guided this exploration of how flood victims perceive the effectiveness of the Liberian government's flood disaster management strategies. A total of 25 participants were recruited for this grounded theory study. Twenty participants were victims of flooding and 5 participants were managers from government and non-governmental organizations (NGO) entities. Data were collected from open-ended semistructured interviews with the participants. Multiple sources such as individuals and group interviews, field notes were used to support the study. Data analysis utilized descriptive coding. Results suggest community and government needs include: (a) policies on zonal regulations to reduce the problem of flooded drainages, (b) funding and other support for disaster emergency management institutions, (c) decentralizing and empowering local government agencies for disaster emergency management, and (d) empowering communities themselves through funding and training to become the first line of defense when floods occur. This dissertation may support positive social change by highlighting the need for government to strengthen disaster management policies to include zoning and building permit regulations, funding for disaster emergency management institutions, and flood control.

Emergency Management: A Qualitative Study of Flood Disaster Vulnerability in Liberia

By

Morris T. Koffa, Sr.

MSc, American Public University, 2006

MA, American Military University, 2008

BS, University of the District of Columbia, 1996

Dissertation Submitted in Partial Fulfillment

of the Requirements for the

Degree of Doctor of Philosophy

Emergency Management

Walden University

January 2018

Dedication

This Dissertation Is Dedicated to:

My Wife, Annie Cole-Koffa and the Children

My Late Parents, Mr. Morris T. Koffa, Sr., and Esther Siede Koffa

and Other Family Members

Volunteers of the Africa Environment Watch

My Coworkers and Friends

Acknowledgments

Tradition of gratitude often requires that one thanks those who directly or indirectly impact one's life in very special ways, especially on a journey as protracted as an academic journey. This farewell to my doctoral journey will be incomplete without mentioning several individuals who have made an extraordinary difference. I would like to pay tribute to my parents and those of my siblings and personal friends who departed this world untimely, and the many others who met their demise as a result of the 2014 Ebola epidemic in Liberia and the entire Mano River Union (MRU). Moreover, I want to acknowledge all of the past teachers and professors who taught me earlier in primary and secondary school as well as in colleges and universities. I wish particularly to reference my professors at the University of the District of Columbia (UDC) for my undergraduate degrees, American Public University and American Military University for my graduate degrees in Environmental Science and Disaster and Emergency Management.

At Walden University, I am grateful to many of my professors at the start of my program, but particularly to my Dissertation Committee chair, Dr. Mary Bruce; methodologist, Dr. David Milan; and the university's content reviewer, Dr. George Kieh, for guidance, patience, and tolerance throughout the entire process. To the advisors and staff of the Writing and Research Centers at Walden University, I express gratitude for their guidance. I am equally thankful to Dr. K-Moses Nagbe for his usual readiness to offer me insights whenever I needed them. Dr. David Blockstein of the National Council for Science and Environment (NCSE) often provided me critical advice. Finally, I do thank the many research participants and other support groups that made my May 2017

research tour to Liberia very meaningful. I hope issues which findings of my study have highlighted will help transform public policy initiatives for the socioeconomic development of Liberia.

Table of Contents

List of Tables v

List of Figures vi

Chapter 1: Introduction to the Study 1

Introduction 1

Background of the Study 3

Problem Statement 6

Purpose of the Study 7

Research Questions 8

Theoretical Framework 8

Nature of the Study 10

Definition of Key Terms 11

Assumptions 13

Scope and Delimitations 14

Limitations 15

Significance of the Study 16

Summary 16

Chapter 2: Literature Review 17

Introduction 17

Literature Search Strategy 18

Theoretical Foundation 20

Liberia: The Historical and Geographic Context 21

The Historical Context 21
The Environmental Protection Agency of Liberia (EPA-L) 23
The Disaster Management Commission 27
Liberia's Disaster Management to Date 30
Disaster Management and Global Initiatives 30
Chapter 3: Research Method 38
Introduction 38
Research Design and Rationale 39
The Role of the Researcher 40
Methodology 41
Participant Selection 41
Instrumentation 42
Procedures for Recruitment 43
Data Collection and Analysis Plan 43
Trustworthiness and Ethical Procedures 47
Ethical Procedures 47
Summary 48
Chapter 4: Results 49
Introduction 49
Setting 50
Demographics 50
Information Data 51

Data Collection 51
Data Collection 53
Unusual Circumstances in Data Collection 53
Field Notes 54
Data Analysis 54
Impact of Floods on Residents and Households 55
Government and NGOs Aid During and After Floods 57
Intra-community Help 58
Evaluation of Findings 60
Effective Policy Implementation 62
Evidence of Trustworthiness 63
Summary 64
Chapter 5: Implications, Recommendations, and Conclusion 66
Introduction 66
Interpretation of the Findings 69
Impact of Floods on Residents and Households 70
Government and NGO Aid During and After Floods 71
Intra-Community Help 71
Intra-Community Help 73
Personal Reflections 75
Recommendations 75
Conclusion 76

References 78

Appendix A; The list of key flood and related disaster events 86

Appendix B: Summary of the Research Participants' Demographics 87

Appendix C: Summary of Interview Proceedings 88

List of Tables

Table 1 *Rates of Disaster Frequency in Liberia* 29

List of Figures

Figure 1. The data collection plan.....48

Figure 2. Framing research questions, sources, evidence and some recommendation…. 71

Chapter 1: Introduction to the Study

Introduction

Chapter 1: Introduction to the Study

Background

For the past 10 years, flood disasters in Liberia have increased in frequency and intensity (United Nations Development Programme [UNDP], 2010). Liberia is a West African country with the population of about four million people (UNDP, 2010). The country is bordered on the west by Sierra Leone, on the north by Guinea, on the east by the Ivory Coast, and on the south by the Atlantic Ocean (van der Kraaij, 2015).

The country's capital, Monrovia, remains currently congested with over half of the country's population (van der Kraaij, 2015). The huge increase in the population has emanated from a few major reasons. The first has been the human instinct to improve upon one's condition of life. Numerous rural inhabitants moved to Monrovia because the capital continues to be the hub of whatever efficient and seemingly abundant modern infrastructures and comforts available to the country. The population increase in the capital was also brought about by a military coup followed by a 14-year civil war (UNEP, 2006; van der Kraaij, 2015). With regard to the military coup, rural inhabitants moved to Monrovia, hoping to acquire economic support, because they had direct or indirect connections to the military junta that led the April 1980 coup (Ellis, 1999). Furthermore, when the civil war started, many more rural dwellers, fearing for their lives, fled to Monrovia, which seemed to have security measures better than what obtained in rural parts of the country. The rural-urban drift increased the congestion that continues to pose serious challenges to disaster emergency management whenever there are floods, particularly in underserved communities in Monrovia.

For my study, I chose Bilimah, one such underserved community, given its size, diversity, and proximity to the nation's capital. This community is composed of several sections—Cow Factory, Doe, Flahn Town, and Stockton Creek—and is inhabited by at least 30,000 residents (Liberia Institute of Statistics and Geo-Information Service [LISGS], 2008). Bilimah is about three miles away from central Monrovia. During the flood season, which normally occurs between May and October, residents in this community face enormous social, economic, and educational challenges. For example, residents are often unable to work or provide food for their families. The school system in the community is often disrupted during floods. Additionally, residents contract flood-borne diseases.

According to United Nations International Children Educational Fund (2011), flood-borne diseases, such as cholera, dysentery, typhoid, malaria, and diarrhea often pose public health threats. The floods usually leave behind bodies of water, which breed plasmodium falciparum and plasmodium malaria mosquitoes (Somah, 1994). These mosquitoes release the deadly malaria virus that annually kills thousands of people in Liberia, particularly children, women, and the elderly (Somah, 1994). Indeed, during those rainy months, the economy in the Bilimah Community is gravely affected because some businesses, including the National Port Authority, Liberia Cement Company (CEMENCO), the Flour Mill, and Cow Factory, operating in the vicinity of this community, often shut down briefly or slow down activities (Africa Environmental Watch [AEW], 2011).

Government agencies (e.g., Ministry of Internal Affairs [MIA], 2008; Ministry of Planning & Economic Affairs [MPEA], 2010) often report that the Government of Liberia (GoL) normally provides emergency management services to alleviate flood-borne challenges. However, there is little

literature on how residents in communities such as Bilimah perceive the effectiveness of these GoL disaster emergency management strategies.

Accordingly, the focus of this qualitative research with a grounded theory design was to explore the effectiveness of the reported disaster emergency management services that GoL provides before and after flooding incidents. Perceptions of the flood victims, regarding the effectiveness of GoL's disaster emergency management services, need to be understood, because, being the presumed recipients of the GoL-provided services, these flood victims can best articulate the effectiveness of such services. Now, findings from the study have highlighted issues such as the problem of flooded drainages; the need for creating and funding disaster emergency management institutions; the decentralizing and empowering of local government agencies for disaster emergency management; and empowering communities themselves through funding and training to become the first line of defense when floods occur. These issues should hopefully draw the attention of policymakers to formulate informed decisions in addressing legitimate concerns of community residents, such as those in Bilimah, as they grapple with social and economic challenges during and after the flood season. The information will hopefully strengthen appropriate public policy initiatives throughout the country.

Background of the Study

Flooding in Liberia increased by 40% from 15% over a 10-year period without possible manageable solutions available (Africa Environmental Watch [AEW], 2011). Flood disaster in the country is prevalent particularly in Montserrado County, where the Bilimah Community is situated (AEW, 2011; Environmental Protection Agency of Liberia [EPA-L], 2008). Numerous businesses are often equally, adversely impacted by flood disasters (AEW, 2011). These businesses include (a) the National Port Authority (NPA), often referred to as the gateway to Liberia's economy; (b) the Liberia

Cement Company (Cemenco), the sole wholesale cement dealer in the country; (c) Cow Factory, where cattle are raised and are often slaughtered for distribution to major butcheries in Monrovia; and (d) a flour mill, are often equally, adversely impacted by flood disasters (AEW, 2011).

Under normal circumstances, these businesses contribute to the national economy and provide an economic lifeline even to residents of the Bilimah Community around which the businesses operate. However, during the flood season, operations in these industries are brought to a halt, leading to the loss of enormous revenue to the community and national government (AEW, 2011). The state of flood disasters in Bilimah has resulted from poor environmental conditions. According to the United Nations Environmental Programme (2006), flood disasters and poor environmental conditions are intrinsically linked.

Liberia's environmental problems began in the 1920s when successive administrations of the Liberian government did not provide much environmental management and protection guidance for numerous industrial companies entering the country (AEW, 2011; Somah, 1994). One example was the Firestone Rubber Company (FRC). The company's agreement of 1926 occurred under Charles Dunbar Burgess King, who served as President of Liberia from 1920 to 1930 (Huberich, 2010). The concession agreement provided Firestone land lease up to 99 years for one million acres at the price of six cents per acre (Huberich, 2010). That agreement did not include environmental protection provisions (Huberich, 2010; Somah, 1994).

In 1944, William V.S. Tubman, the next president of the country, introduced the "Open Door Policy." This policy ushered in a plethora of investors, such as the American Mining Company (LAMCO), National Iron Ore Company (NIOC), Bong Mines Company (BMC), and several logging companies. These companies operated in Liberia without any framework for environmental protection or management (Somah, 1994). Neglecting environmental issues implicitly contravenes

provisions in the national constitution, which guarantee every Liberian the right to life, and by extension, the right to a clean and healthy environment that supports human life (Ministry of Foreign Affairs [MFA], 2003).

Such a neglect of environmental issues with impunity continued until 2003, when President Charles Taylor established the Environmental Protection Agency of Liberia (EPA-L) to manage the human and physical environment of the country. However, the EPA-L did not become operable until in 2006 when Ellen Johnson Sirleaf became president of the country (AEW, 2011). Yet, much did not change. Although the EPA-L was created, key environmental issues related to air, land, and water pollution continued to gravely impact health, business, and education in Liberia (AEW, 2011). There was minimal political will to provide enormous support that could advance EPA-L's mission and vision (AEW, 2011).

Disasters diminish economic growth and disrupt social cohesion (Barton, 1969; Masys, 2015; Gillespie, 1988; Weitz, 2006). Additionally, disaster can prompt civil unrests if not addressed with immediate and sound public policy actions (Kirschenbaum, 2004; Teea & Moe, 2012). Therefore, a comprehensive disaster emergency management framework may be very useful. Such a framework should include plans and support structures for road networks to ensure easy access to emergency help zones, good quality hospitals to address emergency needs of flood victims, rapid response capacity of police and firefighters, and rapid response capacity to disaster emergency situations (Alexander, 2015; Kirschenbaum, 2004; UNDP, 2010; Weitz, 2006).

Furthermore, such a comprehensive framework, for disaster emergency management should help strengthen community-based programs which over time could provide continuous public education related to incidences of flood disasters (Alexander, 2015; Klüver & Mahoney, 2015). Properly managing flood disasters can enhance potential benefits for community residents, such as

removing barriers to wage-earning, reducing interruptions of small businesses that are the source of income for many residents, and reducing interruptions in students' education (Jackson, Faith, & Willis, 2010).

Problem Statement

During the flood season in Liberia, which occurs between May and October, Liberia experiences immense floods. In Monrovia, Bilimah, one of several urban communities, often experiences floods which impede movement, business activities, and schooling for children. The Bilimah Community is home to at least 30, 000 residents, who often face public health crises because of flood-borne diseases such as cholera, dysentery, typhoid, malaria, and diarrhea (Ministry of Health and Social Welfare [MH&SW], 2010). The current study was therefore useful to understand how flood victims perceive the effectiveness of the Liberian government's flood disaster management strategies. Besides understanding perceptions of these flood victims, regarding the Liberian government's strategies, this study helped me understand and highlight issues including the need for creating and funding disaster emergency management institutions; decentralizing and empowering local government agencies for disaster emergency management; and empowering communities themselves through funding and training to become the first line of defense when floods occur. These issues should hopefully draw the attention of policymakers to formulate informed decisions in addressing legitimate concerns of community residents.

There is sparse literature on the Liberian government's disaster emergency management protocols and how flood victims in Liberia deal with heavy floods. This situation of sparse literature was a gap that needed to be filled. If nothing was done to understand the perceptions of victims of flood disaster incidences in most affected areas in the country, the Liberian government would lose an important fraction of its workforce to stress and diseases.

Additionally, businesses such as the National Port Authority, the Liberia Cement Company, the Flour Mill, and Cow Factory adjacent to Bilimah, would over time lose their productive capacity, thereby decreasing expected Liberian government revenue, which is often needed for reconstruction efforts in postwar Liberia. These entities are critical to Liberia's economic viability, and continuous flood events could hamper the nation's sustainable economic growth and development.

Purpose of the Study

The purpose of this qualitative study with a grounded theory design was to explore and understand perceptions of residents in the Bilimah Community in Liberia, regarding the efficacy of strategies reportedly initiated by the Liberian government for flood disaster management. A grounded theory design provides possibilities for collecting and analyzing multiple data to evolve a theoretical framework for understanding people's perceptions of ways in which problems are solved (Chenail, 2011; Creswell, 2013; Miller, 2008). According to Yin (2016), understanding people's perceptions may lead to improving their lives. Generally, participants in grounded theory design would have experienced the impact of a problem or a situation, enabling them to provide an in-depth explanation about approaches to such a problem or situation (Chenail, 2011; Creswell, 2013; Miller, 2008; Yin, 2016). The rich and credible stories, which provide the explanation, may help a researcher develop the appropriate context for future, continuous studies (Chenail, 2011; Creswell, 2013; Miller, 2008; Yin, 2016). Findings from this research helped me understand both the efficacy of the Liberian government's strategies for flood disaster management and how, consistent with Barton's (1969) collective stress theory and Edwards'(1998) varied response theory, flood victims, as a community, approach and heal from

flood disasters. Hopefully, the findings may provide some context to suggest possible paradigm shifts for effective and efficient emergency management strategies in Liberia.

Research Questions

A few authors (e.g., Creswell, 2013; Miller, 2008; Patton, 2012) observed that research questions are intended to provide specificity to a well-developed plan for the theoretical direction of what is being explored and examined. This qualitative research with a grounded theory design was intended to explore and understand the efficacy of the Liberian government's flood disaster management strategies and ways in which, consistent with Barton's (1969) collective stress theory and Edwards' (1998) varied response theory, flood victims respond collectively to floods. Consequently, the key research questions were the following:

RQ1: What, according to residents of the Bilimah Community in Liberia, is the efficacy of the Liberian government's strategies for the emergency management of flood disasters?

RQ2: Consistent with Barton's (1969) collective stress theory and Edwards' (1998) varied response theory, how does the Bilimah Community in Liberia cope with flood disasters?

Theoretical Framework

This qualitative research with a grounded theory design was intended to explore and understand the perceptions of flood disaster victims, regarding the effectiveness of how the Government of Liberia (GoL) often manages flood disasters. Although one key part of my study interest was in the effectiveness of GoL's emergency management strategies pertaining to flood disasters, another part of the interest was in how flood disaster victims, as a community, cope with flood disasters. Public policy administration enquires into why and how people's lives are enhanced; therefore, it constantly seeks to initiate ways by which governments engage with their

citizens (Comfort, 1988; Maloney, Jordan, & McLaughlin, 1994; Schneider, 1995). Such issues as addressed by public policy administration extends to the understanding of external and internal forces that often disrupt social systems, and the extent to which any such disruption may be repaired (Gillispie, 1988; Maloney, Jordan, & McLaughlin, 1994). Because public policy and social systems as applied to disaster emergency management interlink (Lizarralde, Johnson, & Davidson, 2009), my study was framed mainly by Barton's (1969) collective stress theory and Edwards' (1998) varied response theory. Barton's (1969) theory focuses on how a community pulls itself together during disasters and eventually heals itself. Expanding on the theory, Gillespie (1988) stated:

> [Barton's theory] interrelates collective behavior and formal organizations. It advances disaster situations as natural laboratories for research and theory construction. It introduces theoretical and practical issues with emergent roles. It is rigorous but creative. Its foundation is empirical while the ground it covers is expansive. (p. 358)

Regarding Edwards' (1998) theory, Edwards explained that during disasters there is often a variety of stress levels driven by multiple factors. For example, people's responses vary according to environmental factors. Those responses also vary according to family, community, social, and other cultural factors. Edwards' theory therefore emphasized that policymakers pay attention to applicable policies through rigorous research to understand the stress levels and provide the most judicious responses.

The efficacy of the Liberian government's strategies to manage flood disasters needed to be explored to determine what the government, along with communities, does during flood disasters, and how the emergency management of flood disasters may be enhanced. I used the qualitative research method with a grounded theory design. Qualitative research method creates

opportunities for exploring and examining how people understand and approach their problems in disaster emergency situations (Chenail, 2011; Creswell, 2013; Miller, 2008; Yin, 2016). A grounded theory design provides a platform for collecting and analyzing multiple data to evolve a theoretical framework of people's perceptions of problems and how they may handle them (Chenail, 2011; Creswell, 2013; Miller, 2008; Yin, 2016). Thus, in the Liberian context, an in-depth explanation from flood disaster victims, for example, provided a richer understanding of both Barton's (1969) and Edwards' (1998) theories.

Nature of the Study

The nature of the study was qualitative with a grounded theory design. Qualitative research method creates opportunities for exploring and examining how people understand and approach their problems (Chenail, 2011; Creswell, 2013; Miller, 2008; Yin, 2016). Furthermore, a grounded theory design provides a platform for collecting and analyzing multiple data to evolve a theoretical framework of people's perceptions of problems and how they may handle them (Chenail, 2011; Creswell, 2013; Miller, 2008; Yin, 2016). In my study, I used 25 research participants. They included residents of the Bilimah Community, government functionaries, and other relevant stakeholders. The participants were recruited through purposive sampling, with a snowballing technique. The sampling type and technique are both consistent with non-probability sampling applicable to qualitative research methodology (Creswell, 2013; Patton, 2012). The interviews, which were conducted through one-on-one and focus group design, used semistructured, open-ended questions. Open-ended questions often provide opportunities for in-depth explanations necessary for generating sound theories (Creswell, 2013). In addition to the interviews, I used field notes simultaneous with the interviews in order to ensure that all data remained fresh and intact (Kvale & Brinkmann, 2009).

Furthermore, I created field notes, collected documents and archival reports, including speeches of policymakers, news articles, and annual reports of government agencies related to emergency management of flood disasters. The use of field notes, interviews, archival reports, and documents is consistent with strategies for triangulation, which is central to addressing matters of validity and reliability in qualitative research (Creswell, 2013; Kvale & Brinkmann, 2009). The data collected was analyzed, classified, and appropriately coded to determine relevant themes useful for discussion and documenting findings.

Definition of Key Terms

Capacity. A condition of all the strengths and resources available within a community, society, or organization that can reduce the level of risk, or the effects of a disaster (UNDP, 2010)

Disaster. A serious disruption of a community or society causing widespread human, material, economic, and environmental losses, which exceed the ability of the affected community or society to cope (Mileti, 1999).

Emergency management. The discipline that deals with risk and risk avoidance. It includes the fundamental concepts of preparedness, prevention, response, and recovery (Haddow, Bullock, & Coppola, 2008)

Environmental degradation. The reduction in the capacity of the environment to meet social and ecological objectives and needs. The potential effects vary and may help increase vulnerability, frequency, and intensity of natural or anthropogenic hazards. Few examples could be land degradation, deforestation, biodiversity, land, water and air pollution, and climate change (UNDP, 2010)

Governance. Establishing policies and continuously monitoring the proper implementation of such policies by members of the governing body of an organization. Governance includes the mechanisms required to balance the powers of the members and their primary duties of enhancing the prosperity and viability of the organization (Peissker, 2013).

Hazard analysis. Identifying, studying, and monitoring any hazards to determine the potential origin, characteristics, and behaviors (UNDP, 2010).

Hazards. A potentially damaging impact of any human activity, in terms of injury or the loss of life, property damage, social and economic destruction, and environmental degradation (Jain, 2008).

Mitigation. The effort to reduce loss of life and property by lessening the impact of disasters. It is about taking action now before the next disaster in order to reduce human and financial losses later. It includes analyzing risk, reducing risk, and insuring against risk. Effective mitigation requires that people understand local risks, address the hard choices, and invest in long-term community well-being. Without mitigating actions, people's physical and mental safety, financial security, and self-reliance are jeopardized (Federal Emergency Management Administration [FEMA], 2008).

Preparedness. Being alert and ready to employ activities and measures in advance to ensure effective response to the impact of hazards, including issuance of timely and effective early warnings for the temporary evacuation of people and property from threatened locations (UNDP, 2010).

Prevention. using activities that provide outright avoidance of adverse impact of hazards and means to minimize related environmental, technological, and biological disasters (UNDP, 2010).

Recovery. Decisions and actions taken after a disaster, with a view to restoring or improving the pre-disaster living conditions of a stricken community, while encouraging and facilitating necessary measures to reduce disaster risks (Bennet, 2012).

Response. The providing of assistance or intervention during and immediately after a disaster to meet the needs for preservation and basic sustenance of those affected. Response can be immediate, short-term, or long-term (UNDP, 2010).

Risk. The probability of harmful consequences or expected losses (e.g., death, injuries, property, livelihoods, disruption of economic activities, or damage to the environment) resulting from interaction between natural and human-induced hazards and vulnerable conditions (Daniels, Kettl, & Kunreuther, 2006).

Vulnerability. The condition that heightens the physical, social, economic, and environmental needs of a community. It produces instances of defenselessness and insecurity, resulting from physical, social, economic, and environmental factors which expose a community to the impact of hazards. In contrast, positive factors refer to a combination of all the strengths and resources available within a community, society, or organization that can reduce the level of risk or the effects of a disaster (UNDP & GoL, 2009).

Assumptions

The explanation of assumptions adds to the seriousness of every study (Creswell, 2013; Merriam, 2009). In this study, I made four key assumptions. First, the recruited research participants would be accessible for interviews, and that they would provide ample and honest responses about the effectiveness of how Government of Liberia (GoL) manages flood disasters in Liberia. Second, to shed fundamental light on emergency management practices in Liberia, there would be some sizeable quantity of documents including speeches of policymakers, news

articles, and annual reports of relevant government agencies related to GoL's flood disaster management practices. The third assumption was that my choice of qualitative research methodology with a grounded theory design would produce the type of data, which would help me understand the research participants' perceptions of the effectiveness of GoL's flood disaster management practices and how flood victims approached and heal from flood disasters. The fourth and final assumption was that my choice of research methodology and design would help me understand the research participants' community approach to flood disasters in the country, and therefore the applicability of Barton's (1969) collective stress theory and Edwards' (1998) varied response theory. I met these assumptions with at least 70% certainty.

Scope and Delimitations

Several authors (e.g., Corbin & Strauss, 2007; Creswell, 2013; Merriam, 2009) suggested that researchers often pay attention to perimeters that define each study. Thus, I identified three delimitations, which included the study location, population, and research method. First, the study location related specifically to Liberia and not to any other African country. Second, the study was intended to focus simply on one out of numerous congested communities in urban Liberia. The choice of community and the urban location of the study were dictated by my scarce resources and by the poor quality of transport facilities, which often impedes smooth travel outside of the Monrovia, the nation's capital. The challenge of limited resources and poor transport system notwithstanding, the selected community is both strategically located, diverse, and densely populated; it is up to 30,000 residents. The community is surrounded by major business entities, including the National Port Authority, which is the busiest and most revenue-generating port. The third delimitation is the research method. I chose qualitative research method with a grounded theory design, because the study is intended to understand the research

participants' perceptions regarding the efficacy of disaster emergency management practices in Liberia.

Limitations

Limitations address those aspects of a study beyond the control of the researcher (Creswell, 2013; Merriam, 2009). For this study, I anticipated two key limitations. The first was about challenges related to the gathering of good quality responses from the research participants. Fearing possible political reprisals for providing perceptions on the effectiveness of the Liberian government's management of flood disasters, research participants would not provide the anticipated type of honest responses. Therefore, I handled the matters of confidentiality and informed consent with much care, thereby providing the research participants assurances to speak freely.

Another limitation related to the study was about how to approach the issue of language barrier. The principal language of the study was intended to be English. With the Liberian illiteracy rate, which is at least at least 75 percent, and unemployment rate standing at 85 percent (United Nations Educational, Cultural and Scientific Organization [UNESCO], 2011; Wodon, 2012), I thought it would be challenging to select the appropriate research participants, and to explain the issue of volunteer participation to residents of the Bilimah Community.

Accordingly, I recruited a few aides familiar with the culture and norms of Bilimah Community residents for the study. A third and final limitation was about the time and other resources available to me for the study. Being a working student, I took the time for travel and gathering data into consideration. The amount of time away from work, if extensive, could have adversely impacted my income level for the period.

Significance of the Study

In the past 10 years, flood disasters increased, adversely impacting the lives of many underserved residents in Liberia, West Africa. While available reports (e.g., Ministry of Health and Social Welfare [MH&SW], 2010) indicated that the Government of Liberia (GoL) has in place strategies to manage flood disasters, little was known about the effectiveness of such emergency management strategies. Hence, the significance of the current study was expected to be noticed in a few key ways. First, the study was expected to enhance an understanding of the efficacy of GoL's disaster emergency management strategies in order to help suggest productive policies that could impact the social and economic lives of flood disaster victims. Second, the study was expected to show the applicability of Barton's (1969) theory of collective stress and Edwards' (1998) varied response theory to flood disaster victims in Liberia. Understanding the applicability was expected to strengthen levels of empowerment among flood victims in the face of periodic conditions of flood disasters in the country. Third, the study was expected to help enhance the sparse literature on the subject of disaster emergency management in Liberia.

Summary

The current study focused on perceptions about the effectiveness of measures often taken by the Government of Liberia to bring relief to flood disaster victims. Additionally, in order to understand the applicability of Barton's (1969) collective stress theory and Edwards' (1998) varied response theory, the study focused on the flood victims' collective approach to flood disasters and the variety of responses these victims displayed, both during and after flood disasters. Chapter one provided the background of challenges facing the West African nation in dealing with flood disasters. Chapter 2 will focus on literature review, which is intended to explore some of the global best practices in the area of disaster emergency management.

Chapter 2: Literature Review

Introduction

This qualitative research with a grounded theory design was intended to explore and understand the perceptions of flood disaster victims, regarding the efficacy of how the Government of Liberia (GoL) often managed flood disasters. In addition, the study was intended to explore and understand how communities in Liberia approach and heal from flood disasters. I identified the Bilimah Community, which is situated about three miles outside of central Monrovia, was identified for the study, particularly because of its size, diversity, and proximity to the nation's capital. Floods often take a health and economic toll, both on residents of Bilimah and industries in the surrounding areas (Liberia National Red Cross Society [LNRCS], 2010). Urban and suburban areas of Liberia are impacted most because of population density growing out of rural-urban migration as the result of the military coup of April 1980 and the 14-year civil conflict (AEW, 2011; EPA-L, 2008; GoL, 2012; UNDP, 2010).

During the rainy season, homes are destroyed, families are displaced, livelihoods are disrupted, schools for young children are closed temporarily, and businesses are shut down. When businesses are shut down, there is temporary unemployment leading to potential crime in the communities (Ministry of Internal Affairs [MIA], 2008).

Additional concern from flood disasters was the rippling effect of such disasters that goes beyond Liberia. When the floods occur, there is often a disruption in interstate commercial activities, which are expected to feed markets of the Mano River Union. The MRU comprises of four countries—Guinea, Ivory Coast, Liberia, and Sierra Leone—that work in a consolidated way to promote trade and commerce, security, and educational initiatives in the region (GoL, 2012; EPA-L, 2008).

The floods also pose public health challenges, such as vector-borne diseases and increased cases of malaria. Floods leave behind stagnated bodies of water, which serve as breeding grounds for mosquitoes (Ministry of Health and Social Welfare [MH&SW], 2010). These issues make life unbearable for residents. Accordingly, there was a need to understand the flood-related challenges in order to identify sustainable solutions. If nothing was immediately done to deal with these challenges posed by annual floods in Liberia, the intensity of which has been occurring in especially the past 10 years, the volume of national revenue could drop, thus affecting national development goals and programs, particularly in postwar Liberia.

As a scholar in training for Public Policy Administration, with a particular focus on disaster emergency management, I was interested in public policy initiatives of the Government of Liberia in managing disasters. I hoped that findings from my research would contribute to the formulating of strategies necessary for establishing achievable solutions to the increasing challenges often posed by annual floods in Liberia.

I developed the research study, using qualitative research methodology with a grounded theory design. The overarching intent was to derive an in-depth understanding of perspectives of community residents, particularly in Bilimah, regarding the efficacy of the Liberian government's strategies for flood disaster management. Furthermore, there was the need to explore and understand how residents approach and heal from flood disasters.

Literature Search Strategy

Qualitative research requires the use of multiple sources to facilitate the process of triangulation necessary to ensure validity and reliability of findings of a study (Creswell, 2013). In the current study, I intended to use interviews and field notes. Furthermore, I intended to use multiple documents an archival reports, including speeches of policymakers, news articles, and

reports of relevant government agencies related to emergency management of flood disasters. To conduct the literature review, I used search engines, such as (a) Walden University Achieves, (b) Google Scholar, (c) ProQuest, (d) WorldCat, and (e) ERIC to identify books, periodicals, and relevant websites. In the Walden University's online library, I conducted over 25 searches, using key words and phrases such as "flood disaster management," "Liberia and flood disaster management," "disaster management in Liberia," "flood disaster management in Bilimah (Liberia)," and "flood in Liberia in the past 10 years." I found only a negligible amount of literature on disaster management in Liberia.

However, when I expanded the search to the global level, beginning with Africa, a phrase such as "flood disaster in Africa" turned up enormous amounts of information. African countries such as Benin, Burkina Faso, Ghana, Malawi, Mali, Morocco, Mozambique, Nigeria, Niger, Sierra Leone, and Togo came up. Reading through experiences of nationals of these and several other countries around the world, I realized the enormous similarities that could be useful in discussing disaster management and specifically flood disaster management in Liberia. Peer reviewed articles, books, and conference reports, also on disaster management, came up during the search. I analyzed and synthesized these documents in order to build the narrative that did shed some light on Liberia's situation of disaster emergency management.

The literature review in this chapter includes three key parts. The first part focuses on a brief overview of historical and geographic contexts relating to disaster and disaster management in Liberia. The second part focuses on Liberia and other disaster management experiences in the Mano River Union, and the third part focuses on disaster management and global initiatives.

Theoretical Foundation

I conducted the current study, using qualitative research with a grounded theory design. By this, I basically linked public policy and social system as applied to disaster emergency management. I framed the study, using mainly Barton's (1969) collective stress theory and Edwards' (1998) varied response theory. Barton's theory has often been used to explain how, using local power structures, community residents can pull themselves together during disasters and eventually heals themselves. Barton's theory is a foundational theory, which grew out of the social sciences (Gillespie, 1988; Maloney, Jordan, & McLaughlin, 1994). Barton used his theory to show how one may predict human behavior (Drabik, 2004). Barton's (1969) theory, according to Enarson, et al. (2003), helps researchers find answers to questions related to the depth of empathy created as the result of disasters and the extent to which such empathy strengthens the degree of responses among internal and external stakeholders.

The sense of Barton's (1969) collective stress theory explained the multiple levels of stress which humans face from time to time. Whereas external sources of stress include "earthquakes, tornadoes, floods, droughts, and hurricanes," internal sources include "economic depression, inflation, slums, strikes, riots, banditry, and revolutions" (Gillespie, 1988, p. 347).

> While Barton encourages a multidimensional analysis of situations of disasters or emergencies, the core blocks of analysis focus on eight areas, namely, (1) communication about collective deprivation, (2) victims' communication about their own deprivations, (3) knowledge of extent and intensity of deprivation, (4) sympathetic identification with victims, (5) subjective deprivation, (6) blaming victims, (7) moral standards requiring helping, and (8) helping behavior. (Gillespie, 1988, p. 350)

In other words, Barton's (1969) collective stress theory sheds light on the mental and physical inadequacies often generated by disasters and other emergencies, the tensions created as community stakeholders sort through categories of vulnerabilities, and how the evolving conflicts are negotiated for the healing of the community. This situation, then, requires an integrated approach towards gathering resources in order to ameliorate the problem. But even more challenging is the question of finding "a more coherent way for governments to do more with less" (Gillespie, 1988, p. 350).

Edwards' (1998) varied response theory, too, explored the variety of responses displayed by disaster victims during disasters and other emergencies. These responses relate to environmental, family, community, and other cultural issues. To sum up, Barton's (1969) collective stress theory and Edwards' (1998) varied response theory provided the appropriate guidance as I formulate semistructured, open-ended questions for the interviews, while simultaneously taking field notes and exploring various documents and archival reports related to the efficacy of the Liberian government's strategies for disaster emergency management. In a broader context, Barton's (1969) collective stress theory and Edwards' (1998) varied response theory enhanced my responses to the research questions applicable to understanding the efficacy of the Liberian government's strategies and flood victims' approach to annual flood disasters.

Liberia: The Historical and Geographic Context

The Historical Context

Liberia, like most African countries, has had its colonial roots from which it eventually became a Republic. Historically, the United States of America, under the umbrella of the American Colonization Society (ACS), founded Liberia. The ACS was composed of freed black slaves from the United States, who settled in a West African spot to become known later as

Liberia. This process began in 1822 (Huberich, 2010). The settlement of the freed slaves was a paradigm shift, from denigrating a whole class of people as deserving no personhood worthy of respect, to acknowledging them as people capable of formulating public policies and strategies to enhance their political, economic, educational, and social wellbeing (Starr, 1913).

With little or no support, these freed people of color, commonly known as settlers in Liberia, embarked upon creating the state of Liberia with a national development agenda that seemed well-intentioned; however, they minimized the focus on the health of the environment, including the quality of the waterways, the forestland, and the air. Thus, over the years of little attention to the environment, health hazards and other vulnerabilities built up (AEW, 2011; UNDP, 2010). The central government was built mainly around urban lifestyle distant from rural life comprising features such as plant life, rivers, and so on. Such features seemed to suggest plantation life and therefore the life of slavery (Sawyer, 1992). Naturally, freed slaves, who in slavery had worked acres and acres of farmland for the slave master, detested any activity to remind them of past days of suffering (Sawyer, 1992; Somah, 1994). On the other hand, the indigenous peoples, whom the settlers, met on the land took constant pride in cultivating the land and treating the environment with dignity and necessary respect (Huberich, 2010). These divergent perspectives, regarding how to treat the environment, often created friction between the settlers and the indigenous peoples of Liberia (Somah, 1994). This early period of the nation's history and subsequent periods became the context for concerns for environmental degradation in Liberia.

With the settlers' view about the environment of the forestland, waterways, etc., numerous rural inhabitants of the country witnessed a consistent period of neglect, particularly as multinational corporations started appearing in Liberia and conducting activities such as the

excavation of the land and the transporting of minerals from established mines through available waterways (van der Kraaij, 2015). This process of transportation eventually polluted the waterways. Moreover, this pattern of business without much social and environmental responsibility continued from one administration to another with built-in environmental threats and hazards escalating to unprecedented levels in the country (AEW, 2011; UNDP, 2010).

Environmental degradation and disaster emergency management are inseparable (Fisher & Botterill, 2003; Gist & Lubin, 1989; UNEP, 2009). In 2008, the International Strategy for Disaster Reduction (ISDR) observed that linking the environment and disaster management is grounded in scientific research (UNEP, 2009). Available evidence suggests that climate change and global warming have significantly altered raining patterns of regions prone to floods. Thus, hazards from poor environmental conditions set the stage for disaster problems that some nations may face if they are indifferent to serious environmental issues (UNEP, 2009; United Nations Framework Conference on Climate Change [UNFCCC], 2016). That situation is true for Liberia. The lack of proper policy orientation towards actions, such as sound and enforceable regulations to building codes, and proper garbage collection systems to avoid the clogging of drainages, has led to more challenges which Liberia continues to grapple with.

The Environmental Protection Agency of Liberia (EPA-L)

Environmental degradation can be a major contributing factor to flood-related disaster risks and vulnerability of residents (AEW, 2011; UNDP, 2010). Hence, efforts should be made to reduce potential hazards by strengthening community preparedness and rapid response capacity. How Liberian functionaries handle the nation's environmental problems can be a good indicator as to how vulnerability levels in communities may be reduced. Since the inception of Liberia in 1847, there had not been an agency responsible for the management of the environment (UNDP,

2010). However, in 1999 after over a century, the Government of Liberia under President Charles Taylor, and with the support of the United Nations Development Programme, established the National Environmental Commission of Liberia (NECOLIB). NECOLIB had the mandate to oversee all environmental activities in the country and serve as the coordinating entity for the environment, coming up with policies and regulations for the environmental activities of the nation (National Transitional Government of Liberia [NTGL], 2005). Prior to the establishment of NECOLIB, environmental management activities in Liberia were fragmented among line ministries and agencies. These governmental ministries and agencies directed environmental activities with no clear coordination. Such fragmentation yielded no effective result for the overall handling of environmental issues in the country.

NECOLIB was envisioned to coordinate all fragmented aspects of the environmental program of the government and also to serve as the focal point for all international environmental treaties. NECOLIB was in essence a good idea (NTGL, 2005). Additionally, NECOLIB was given the authority to oversee the activities of environmental NGOs for a better coordination of the efforts to avoid duplication of functions (UNEP, 2009). Although NECOLIB was constituted to play a central role on environmental issues in the country, its role was not impactful. The reason is that it was not given adequate economic support to serve communities threatened by a variety of disasters (International Federation of Red Cross and Red Crescent Societies [IFRCS], 2014). Later, however, NECOLIB became resourceful in helping to create the Environmental Protection Agency of Liberia (EPA-L). That was in 2003, at the end of the civil war. EPA-L became somewhat functional in 2006 (AEW, 2011; EPA-L, 2008).

The 14-year civil war, more than any other event in the country, worsened the environmental conditions in the country. The civil war created high levels of vulnerabilities for

residents and communities. As the war intensified, an influx of rural inhabitants poured into cities, especially Monrovia, seeking a safe haven from war zones. One of such communities affected was Bilimah. The influx of rural inhabitants worsened poor zonal and building code regulations, poor housing conditions, garbage collection systems, etc. (Ministry of Health & Social Welfare [MH&SW], 2010; UNEP, 2009). With the frequency and intensity of annual rainfall in the country, communities such as Bilimah have not been prepared to handle the challenges posed by the flood disasters. Therefore, such communities have remained socially and economically disadvantaged (AEW, 2011).

From 2003 to 2005, the National Transitional Government of Liberia (NTGL), which was one of the provisional, postwar administrations, paid little attention to capacity building of the EPA-L. One major reason for such minimal attention was that this provisional administration was created simply to prepare the fragile nation for national elections. Consequently, EPA-L remained virtually dormant throughout the tenure of the interim government (AEW, 2011; UNDP, 2010; UNEP, 2009).

The limited support notwithstanding, EPA-L, which was institutionalized in 2006, has made noticeable strides in the area of Environmental Impact Assessments (EIS). It has ensured an EIS for almost every project. Moreover, EPA-L has embarked upon capacity building by enrolling available candidates into tertiary institutions of learning (AEW, 2011; EPA-L, 2008).

The area of noticeable challenge for EPA-L is how to successfully regulate the collecting of garbage and solid wastes that usually pose health risks to the public (AEW, 2011). With budgetary constraints and the lack of political will among the legislative, executive, and judicial branches of the Government of Liberia, EPA-L's leadership, past and present, has sought

partnerships nationally and internationally in an effort to consolidate help for the internal and external institutional capacity building of the agency.

Of the many local, national, and international organizations that have formed partnerships to help EPA-L in environmental capacity building and environmental educational awareness, Africa Environmental Watch (AEW), formerly the Liberia Environmental Watch (LEW), has made an important mark. Prior to institutionalizing EPA-L in 2006, AEW began organizing environmental conferences both in Liberia and the USA. AEW strove to help build strong partnerships with the United States Environmental Protection Administration (USEPA), National Council for Science and the Environment (NCSE), Global Environmental Facilities (GEF), USAID, Conservation International (CI), Environmental Law Institute (ELI), University of the District of Columbia (UDC), Bowie State University (BSU), Alabama State University (ASU), North Caroline State University A&T, etc. (AEW, 2011; EPA-L, 2008).

Through AEW's leadership, an assessment team comprised of technical experts from UDC and NC A &T traveled to Liberia for a conference on environmental matters. This conference was followed by the development of a curriculum for environmental degree programs at the William V. S. Tubman University and Stella Maris Polytechnic. In spite of all these efforts, EPA-L is still struggling to meet expectations, mainly because the problems are bigger than the agency can handle. In essence, much more needs to be done across the length and breadth of the country in sanitation-related areas, such as solid waste management, proper garbage collection, and the providing of safe drinking water.

At the time of the current study, there is only one sanitary landfill in Monrovia. This is inadequate, especially knowing that the city is inhabited by at least 1.5 million people. There are several dumpsites that don't meet the design criteria to control contaminants (UNEP, 2009). As a

result, garbage and other wastes are left uncollected and they at times end up in drainage paths, leading to public health threats (AEW, 2011).

Another concern that is worth mentioning is the fact that Liberia is a tropical nation and is situated in a hydrological location, which makes it prone to relatively high water levels and therefore susceptible to flood disasters (UNDP, 2010). As a result, the increase in flooding has become overwhelming. Flooding in Liberia has increased from 15% to 40% over the past 10 years. With communities such as Bilimah not being equipped with the right tools, materials, and skills, residents continually find the handling of floods extremely challenging (Ministry of Planning and Economic Affairs [MPEA], 2010; UNDP, 2010).

The Disaster Management Commission

In 1976, the first National Disaster Relief Commission (NDRC) was established through an executive order by President William R. Tolbert. This action resulted from a massive flood in the Lynch Street Community, Monrovia (UNDP, 2010). The flood destroyed property in the millions of dollars, and displaced several hundreds of residents (Ministry of Internal Affairs [MIA], 2008). The NDRC was mandated to operate under the Ministry of Internal Affairs. Like most things governmental in the country, NDRC could not perform effectively and efficiently because of major challenges to the availability of resources, including logistics and skilled teams to run the entity (Ministry of Information, Cultural Affairs and Tourism [MICAT], 2015).

Thereafter, a series of disaster events, including erosion, windstorm, fire, disease epidemics, and mostly floods, emerged. One example was the 1980 Camp No-way landslide which buried an entire village of over 300 residents, as a result of Bong Mining Company's activities in that part of the country. Additionally, there was the devastating flood flash of 2007 and 2008 in several counties in Liberia (MICAT, 2011). The flood flash affected hundreds of

residents (MIA, 2008; MICAT, 2015). Moreover, the flood flash hit several communities such as Fanti Town in Grand Bassa County, New Kru Town in Robertsport, and Grand Cape Mount County. At about that time, in Monrovia, there were flood disasters in King Gray Community in Paynesville and Fish Market in Sinkor. In the end, more than 22,000 people were displaced (MICAT, 2015).

In 2008, after visiting few flooded sites, Liberia's Information Minister, the chief spokesperson of government, made an appeal to the government to resuscitate the NDRC and make it compliant with the global community's proactive approach aimed at reducing disaster risk by adapting the concept of Disaster Risk Reduction (DRR) and Early Warning System (EWS). However, the minister's plea did not receive a positive and timely response (MICAT, 2015). As the flooding and concomitant hazards became widespread, there were several more calls from stakeholders, including individuals, businesses, and residents, urging the Liberian government to act upon what constituted potentially dangerous trends of flood disaster events (UNDP, 2010). Appendix (A) contains a list of key flood and related disaster events in Liberia.

Eventually in 2009, with the help of UNDP, an emergency management framework was drafted and named the National Disaster Management Commission (NDCM), with focus on Disaster Risk Reduction (DRR) and Early Warning System (EWS). Since the proposal of the NDMC, Liberian lawmakers have not been able to enact laws making NDMC an official entity. To date, the NDMC is still in its proposed form. However, a tiny unit of NDMC created under the Ministry of Internal Affairs (MIA) operates minimally, obviously with no significant impact on challenges facing vulnerable communities (AEW, 2011).

Liberians have experienced various types of disasters and yet disaster emergency management infrastructures are far from being fully constituted and supported. The most

common hazards affecting majority of the communities in Liberia are floods, windstorms, disease epidemics, fire, drought, and sea erosion (UNDP, 2010). Table 1 contains information regarding incidences of a variety of climatic hazards in the country.

Table 1

Rates of Disaster Frequency in Liberia

Hazards	Rate of Frequency
Windstorm	**39%**
Flood	25%
Sea Erosion	**20%**
Fire	**14%**
Water Pollution	**2%**

Source: United Nations Development Programme (2010)

As the table shows, floods stand at 25% frequency, increasing dramatically over the past 10 years (AEW, 2011; EPA-L, 2008; UNDP, 2010). Although windstorm is at 39%, it is not a common occurrence in a community like Bilimah, but floods do. The path of destruction of windstorms is not as severe as that of floods. The floods make devastating impact. For example, they damage homes and belongings, which impacts individual livelihoods. Certainly, each magnitude of destruction increases the magnitude of vulnerability (AEW, 2011).

Liberia's disaster management preparedness was tested during the Ebola epidemic of 2015; the outcome revealed that there were numerous challenges in addressing the issues of disaster emergency management. Available literature shows that Liberia is either noncompliant with all of the DRR or EWS protocols, or it is not significantly investing in best practices of disaster emergency management because of the apparent culture of indifference to environmental issues. Such indifference has been compounded by the Liberian civil war (AEW, 2011). To combat disaster requires enormous and continuous support from national leaders. It is a national security issue that should not be taken lightly because the well-being of the residents depends on such a support. Flood disasters threaten every aspect of the nation and can be exploited by both

external and internal forces that may wish to stir discord. Doubtless, these disasters can bring sovereign nations to their knees (UNDP, 2010).

Liberia's Disaster Management to Date

Of almost all of the national development activities that have been taking place in Liberia from a century ago, disaster emergency management seemed of little interest, particularly for most previous national political administrations. However, the Ellen Sirleaf-led government began to exert some effort. But population growth, continuous climate imbalance, little technological advancement in the country, and the threat of global warming has posed challenges (UNDP, 2010).

Prior to the Sirleaf-led government, the William R. Tolbert administration attempted to establish the first disaster relief commission after a major flooding in 1976 in the Lynch Community in 1976. However, the relief commission became defunct because of the lack of a strong political will and resources (UNDP, 2010). Liberia had no disaster emergency management program until in 1976 when the Tolbert-led administration's executive order for the establishment of the National Disaster Relief Commission (NDRC) was signed (Government of Liberia [GoL], 2012; UNDP, 2010). Liberia has come a long way, and much effort needs to be exerted to bring about change to unhealthy environmental conditions in the country.

Disaster Management and Global Initiatives

The global community, through the United Nations, has taken steps to devise appropriate ways aimed to reducing the impact of disasters. Towards the end of the 20th century, ubiquitous occurrences of disasters became a wakeup call in numerous regions of the world (Coppola, 2007; UNISDR, 2008). It became evident that the trends of disasters around the world were increasing and something urgently needed to be done to reduce the frequency and intensity of disasters by

enhancing resilience, adaptation, preparedness, prevention, response and recovery initiatives in every country.

Past decades recorded massive flood-related human and economic losses and an unpalatable destruction to the environment. These became alarming to the United Nations. Therefore, the UN vowed to bring countries and institutions together to develop workable frameworks with specific focus on Disaster Risk Reduction (DRR) and Early Warning System (EWS) for safer communities and a better world (UNDP, 2010). Guba-Sapir, Hoyois, & Below, (2013) indicated that natural disasters cost the global economy about 2.5 trillion dollars between 2000 and 2013, and millions in deaths during the same time.

Africa, too, has incurred social and economic losses because of high levels of risk and vulnerability. The African situation is compounded by poverty and poor governance (AU, 2004; ECOWAS, 2006). For the past decades, Africa has been recorded as the most impacted continent due to impoverishment and corruption in most of the African countries, where resources are diverted from social programs (AU, 2004; ECOWAS, 2006). As these disasters grow and are widespread, the resulting economic and social conditions do not any longer remain the responsibility of the impacted nations or regions, but equally those of the global community, especially when the impact overwhelms nations or the regions of the world (Coppola, 2007; Liberia National Red Cross Society [LNRCS], 2010).

Furthermore, the longer a disaster stagnates in the impacted locales, the more challenging the recovery process becomes. An example of this phenomenon was the Ebola epidemic in West Africa, particularly in the Mano River basin where Guinea, Liberia, and Sierra Leone are situated. Seeing the growing disastrous effects of Ebola, the global community rallied around the affected nations. Before the disease could be brought under control, over 5,000

people died in Liberia, besides billions of dollars in property losses (United Nations [UN], 2015). Guinea, Liberia, and Sierra Leone were the hardest hit and the impacts were so severe only because there were no relevant infrastructures related to the healthcare system, safe and secure environment conditions, and disaster emergency management. International organizations, including the United States Center for Disease Control (CDC), United States Military, UN, World Bank, and other monetary and goodwill institutions, came in to aid the severely impacted nations for post-Ebola recovery initiatives.

Had these affected countries effectively practiced or incorporated the principles and guidelines of the UN disaster management framework, regional and national protocols through the application of DRR and EWS concepts, more lives would have possibly been saved and the economic losses would have been minimized. Significant resources that could have been used for social development are now being diverted to responses and recovery from disasters, only because many nations continue to ignore best practices of emergency management as enshrined in several global protocols and treaties.

Given the increase in disasters around the world, with untold human causalities, massive economic losses, and destruction to the environment, the UN has continued to feel the need to press for a uniformed approach through resolutions and conventions. Such a uniformed approach could help reduce the impacts of disasters. Few of those events, for example, were the Buyin – Zara earthquake that struck Iran and killed more than 12,000 people; and the hurricane that struck the territories of Cuba, the Dominican Republic, Haiti, Jamaica, and Trinidad and Tobago, resulting in the loss of thousands of lives and causing considerable material damage (United Nations International Strategic Disaster Reduction [UNISDR], 2008). By the UN resolutions, it became clear that member states were being challenged to incorporate into their development

agenda national disaster-mitigation programs as priority. They needed to pay attention to the state of their economies, land use, and insurance policies for disaster prevention or relief, particularly in developing countries (Coppola, 2007, p. 6).

In December 1987, the UN General Assembly declared the 1990s as the "International Decade for Natural Disaster Reduction" (IDNDR) in an additional step and effort to reduce the impact of national disasters in terms of human lives and economic losses (Coppola, 2007; UNISDR, 2008). The action was further necessary as an effort to promote internationally coordinated efforts to reduce social as well as economic disruptions caused by natural disasters, especially in developing countries, and to build and improve member states' capacity to prevent adverse effects of natural disasters through established guidelines that all member nations were required to adhere to (Coppola, 2007; UNISDR, 2008).

Mounting all efforts for a collective approach to reducing disaster impacts, the UN, in January 2005, convened a world conference on disaster reduction in Hyogo, Japan. More than 168 governments, 78 UN specialized agencies, and over 40,000 participants attended the conference, where the Hyogo Framework Accord (HFA) was adopted. The accord would last for 10 years, focusing on a few benchmarks: (a) to effectively integrate disaster risk consideration into planning sustainable development policies and programing at all levels, with a special emphasis on disaster prevention, mitigation, preparedness, and reduction of vulnerabilities; (b) to develop and strengthen institutions, mechanisms, and capacities at all levels, in particular at the community level, which could systematically contribute to building resilience to hazards; and (c) to systematically incorporate risk reduction approaches into design and implementation of emergency preparedness, response, and recovery programs into the reconstruction of affected communities (Coppola, 2007; UNISDR, 2008; Vordzorgbe, 2008). After a decade, the UN

reconvened to assess the successes and challenges of the HFA (Coppola, 2007; UNISDR, 2008; Vordzorgbe, 2008).

Like the United Nations, the African Union (AU) in collaboration with its new partnership for Africa's development (NEPAD) developed the African Regional Strategy for Disaster Deduction, which has recognized and institutionalized the overarching principle of the HFA. NEPAD speaks succinctly to the concept of being proactive to preparedness and prevention through the concept of adopting DRR and EWS. A manifestation of this novel idea of DRR and EWS stands as the bedrock of the Hyogo Framework for Action (HFA). It was set for a 10-year span, running from 2005 to 2015. The African version was formulated also in Hyogo, Japan, at the world conference on disaster reduction. The accord with the African perspective also emphasized the building of resilience as a global strategy in handling disasters (African Union [AU], 2006; ECOWAS, 2004; Olowu, 2010).

African countries in most instances are disadvantaged because they lack adequate preparedness in disaster emergency management initiatives (UNISDR, 2008). At the end of the 10-year timeframe, the body would convene to evaluate progress or challenges to the Hyogo Framework Accord (HFA). Recognizing the work done by the UN, African Union and ECOWAS have developed their own framework drawn out of the HFA. This two-pronged initiative has been dubbed as the African Regional Strategy for Disaster Reduction and ECOWAS Policy for Disaster Risk Reduction, both intended to support sub-regional networking for national platforms to reduce disasters, promote expansion of various aspects of the Early Warning System (EWS), and support public awareness and advocacy of disaster reduction (AU, 2006; ECOWAS, 2004).

The reason for this global alignment is essentially to emphasize the inherent danger of disaster and to further stress the need for every member country to participate in the DRR and EWS concepts that are built on strengthening resistance capacity in local communities through a robust mitigation-driven approach. The overarching plan for all of the frameworks is to adopt guidelines which point to being proactive in adopting the concepts of identifying hot spots, risk, and vulnerabilities in communities and then applying DRR and EWS to reduce the impact (UNISDR, 2008). Liberia was among the countries that adopted the HFA in 2005, party to the Africa Union (AU) Regional Strategy for Disaster Risk Reduction, and the Economic Community of West African States (ECOWAS). While these frameworks are in place, however, their effectiveness in most African countries remains very limited (AU, 2006; ECOWAS, 2004).

The point is that in the HFA, member states called for a strong commitment from individual countries and the international community to address disaster reduction, formulate results-based plans of action, and bring them into a common system of coordination. The member states also outlined five priorities for action and offers guiding principles and practical means for achieving disaster resilience. In addition, HFA's key goal was to substantially reduce disaster losses by 2015, by building the resilience of nations and communities to face disasters through coordination, collaboration, and cooperation (UNISRD, 2008). HFA was formulated on five priorities as the core mission: Priority (1) making disaster risk reduction a policy priority, and strengthening relevant institutions; (2) assessing risks and early warning systems; (3) ensuring education, information and public awareness; (4) Reducing underlying risk factors; and (5) Being prepared for effective response (UNISDR, 2008). These five priorities stand out as the fundamental impetus guided by hopes of good governance practiced by individual countries, who are expected to incorporate these principles into their development agenda. The UNISDR

stressed the need to build this vital five-pronged concept mostly for underdeveloped countries in regions such as Africa.

The African Union (AU) also attached serious commitment to the HFA's concept of disaster risk reduction and further illuminated the significance of the concept for most countries in Africa. Reports on disaster events in Africa often draw the attention of UN and the global community as a whole. Reports have it that Africa is the only continent whose share of disaster challenges in the world have increased very significantly over the past decades (AU, 2006). Therefore, it is extremely important that the framework of disaster emergency management initiatives guides member states of the continent (AU, 2006; ECOWAS, 2004).

Disaster impacts have become an impediment to sustainable development in Africa (AU, 2006; ECOWAS, 2004). About 75% of the West African population lives in areas affected by tropical cyclones, floods, droughts or earthquakes at least once in every two years. About 13% of Africa's population, or 35 million, recorded at least one form of disaster and thousands of people and their livelihoods exposed to at least one disaster event caused by vulnerability to natural hazards (ECOWAS, 2004). Acting upon these global and regional frameworks in practical terms could significantly reduce losses to human lives, property, the national economy, and the environment (AU, 2006; ECOWAS, 2004).

Summary

Networking through national, regional, and global initiatives is very important. These initiatives highlight the urgency attached to the best disaster emergency management practices. Knowledge about the initiatives should help create much strife for maximum, effective results. Disasters do show social and economic challenges that may severely impact most nations if they do not build the appropriate infrastructures (AU, 2006; ECOWAS, 2004). Just as some nations,

whether developed or underdeveloped, are making some strides, Liberians need to strengthen the political will and support a productive system of disaster emergency management. Chapter 3, which is the next chapter, will discuss specific research protocols that were us3ed to generate appropriate data necessary for understanding the efficacy of Government of Liberia's strategies for disaster emergency management. The chapter will also discuss the applicability of Barton's (1969) collective stress theory and Edwards' (1998) varied response theory.

Chapter 3: Research Method

Introduction

Disaster emergency management in Liberia has remained challenging for many years (United Nations Development Program [UNDP], 2010). The relevant infrastructures have been either nonexistent or very weak. Much needs to be done to pay significant attention to these infrastructures. One major reason for the urgency is that flood disasters in the past 10 years have increased tremendously. With the capital of the country fully congested, policymakers need to pay enormous attention to the urgency to ameliorate the impact of flood disasters. The country's capital, Monrovia, remains currently congested with over half of the country's population (van der Kraaij, 2015). The huge increase in the population has emanated from a few major reasons. The first has been the human instinct to improve upon one's condition of life. Numerous rural inhabitants moved to Monrovia because the capital continues to be the hub of whatever efficient and seemingly abundant modern infrastructures and comforts available to the country.

The population increase in the capital was also brought about by a military coup followed by a 14-year civil war (UNDP, 2010; van der Kraaij, 2015). With regard to the military coup, rural inhabitants moved to Monrovia, hoping to acquire economic support, because they had direct or indirect connections to the military junta that led the April 1980 coup (Ellis, 1999). Furthermore, when the civil war started, many more rural dwellers, fearing for their lives, fled to Monrovia, which seemed to have security measures better than what obtained in rural parts of the country. The rural-urban drift increased the congestion that continues to pose serious challenges to disaster emergency management whenever there are floods, particularly in underserved communities in Monrovia.

While there have been attempts to record basic data related to flood disasters that have occurred in Liberia—such as when and where they have occurred in the country—there is a dearth of research in regard to understanding the efficacy of the national government's response to flood disasters in the country. Accordingly, I used this qualitative study with grounded theory design to explore and understand the efficacy of the Government of Liberia's emergency management of floods and flood victims' community approach to coping mechanisms. The key research questions I used, therefore, were as follows:

RQ1: What, according to residents of the Bilimah Community in Liberia, is the efficacy of the Liberian government's strategies for the emergency management of flood disasters?

RQ2: Consistent with Barton's (1969) theory of collective stress and Edwards' (1998) varied response theory how does the Bilimah Community in Liberia cope with flood disasters?

Research Design and Rationale

I used a qualitative research method with a grounded theory design for this research. The qualitative research method creates opportunities for exploring and examining how people understand and approach their problems (Chenail, 11; Creswell, 2013, Miller, 2008; Yin, 2016). Additionally, a grounded theory design serves as a way of collecting and analyzing multiple data to explore and understand a theoretical framework of people's perceptions of problems and how they may handle such problems ((Chenail, 11; Creswell, 2013, Miller, 2008; Yin, 2016).

Through the qualitative research method with a grounded theory design, I was able to gather perceptions of research participants about the efficacy of the strategies of the Government of Liberia's disaster management during flood disasters. Moreover, I was able to understand how flood victims as a community approach floods and heal from the disaster.

The Role of the Researcher

The role of the researcher is very important in collecting, organizing, and analyzing data, particularly in qualitative research (Chenail, 2011; Creswell, 2013; Merriam, 2009). The researcher's interests, beliefs, and values do guide the recruitment of participants, the types of questions to ask, and, in fact, the general conduct of the study (Fink, 2000). Three attributes have been critical to my readiness for the current research. First, prior to the civil war, I lived on Jamaica Road. This area is adjacent to Bilimah, which is the specific locale of the study. Second, since my departure from Liberia, I have returned over time, as a volunteer working on social and environmental issues through the Liberia Environmental Watch (LEW), now known as the Africa Environmental Watch (AEW). Beginning from 2003, I have returned to Liberia to promote environmental awareness, community empowerment, and institutional capacity building. I am currently a volunteer for the AEW and have had the privilege to travel to Liberia almost every year since 2003. The AEW advocates for environmental awareness, protection, and institutional capacity building as well as community empowerment, with specific focus on Liberia, because of the country's postwar circumstances. For about a decade now, the AEW has been encouraging Liberian policymakers to pay serious attention to environmental and emergency management issues.

In my role as the researcher, I am also familiar with the basic language culture of the country and the community. I am familiar with the local English variant of the country and the community of choice for the study. Where there were challenges related to local African languages, I used a few aides for those participants who did not have the capacity to use any variant of the English language. In addition, I am familiar with the functionaries of government responsible for addressing social and economic issues related to managing flood disasters. In

short, as a result of my volunteering services in Liberia and several travels into the country, I developed professional relationships with many of the stakeholders. AEW has taken the lead to champion institutional capacity building initiatives on behalf of the Liberia Environmental Protection Agency (EPA-L, 2008).

Methodology

Participant Selection

I recruited research participants in the study were recruited from one of numerous congested communities in urban Liberia. The choice of one community and the urban location of the study was based on resources available to me and on the poor quality of transport facilities, which often impede smooth travel outside of Monrovia, the nation's capital. The challenge of limited resources and poor transport system notwithstanding, the selected community is strategically located, diverse, and densely populated with up to 30,000 residents. Moreover, the community is surrounded by major business entities, including the National Port Authority, which is the busiest and most revenue-generating port. These businesses are also equally affected immensely during floods.

In qualitative research, multiple sources are often used to collect and analyze data; therefore, sampling size is not a sole determinant of the quality of data used to derive findings (Creswell, 2013). However, the sample size must equally contribute to the purpose and goal of the study (Creswell, 2013; Merriam, 2009; Yin, 2016). Accordingly, I recruited 25 research participants for the study, using a purposive sampling with a snowballing technique. Where there is no pre-determined list to draw from, snowballing technique becomes useful to expand on the pool of research participants and to derive a meaningful understanding about a situation, condition, or experience (Biernack & Waldorf, 2013). The research participants comprised of

residents of the community, government functionaries, who are often responsible for disaster emergency management and all other stakeholders whose views enhanced an understanding of disaster emergency management practices in the country.

Instrumentation

In this study, I used three key instruments. As the researcher, I served as one of the key instruments. Data are often filtered through researchers. Researchers provide the control and perspective on what to include and exclude from data in a study, as long as such data help to achieve the research purpose and goals (Creswell, 2013; Kvale & Brinkmann, 2009; Merriam, 2009; Yin, 2016).

Besides the researcher as instrument, I used an interview guide. Interview guides serve as a means for each researcher to maintain sufficient focus on the purpose and goal of a study. Interview guides help researchers do an in-depth probing of research participants, leading to 000000000000000000000000000richer responses. Interview guides make it feasible for the researcher to align participants' responses with the purpose and research questions of the study (Kvale & Brinkmann, 2009). As interview guides are no more than a template (Merriam, 2009), I formulated an interview guide consistent with the research questions and available literature. I ensured that the language and content of each semistructured question of the interview guide was situated to conform to the level of understanding of the research participants. Consistent with matters of confidentiality and informed consent (Kvale & Brinkmann, 2009; Merriam, 2009), I kept control of all electronic gadgets important to the study. Where and when the use of any of these gadgets became necessary, I cleared the use with the relevant research participant, whether an individual or an institution.

Procedures for Recruitment

Following the approval of the Walden University Institutional Research Board, approval #05-0217-0337914, I began the process of recruiting research participants through purposive sampling with a snowballing technique, which is useful for non-probability research protocols (Creswell, 2013; Biernack & Waldorf, 2013). For the recruitment, I used flyers and all available means to announce the potential research and to invite potential research participants. In the end, 25 participants agreed to be interviewed. Once I accessed the participants, I discussed matters of confidentiality and. informed consent. I explained matters, such as the following: (a) All affirmed research participants were free to participate in the study; (b) They could leave the interview if and when they chose, and they would not be penalized; and (c) There would not be financial rewards for participating; however, findings from the study would help policymakers craft useful environmental policies that could benefit the community and the entire country (Creswell, 2013; Kvale & Brinkmann, 2009). Throughout the process, I kept taking notes to ensure the integrity and validity of the data.

I conducted the interviews in two phases. The first phase was to garner as many responses as possible from the research participants. During the second phase, I used a focus group. All these phases were important for triangulating and later consolidating the research participants' responses. The process of triangulation and consolidation ensures robust discussion of the data, and strengthens the validity and reliability of the study (Kvale & Brinkmann, 2009; Merriam, 2009).

Data Collection and Analysis Plan

Consistent with qualitative research, I used multiple sources for gathering data for the study. These sources included interviews, field notes, documents, and archival reports (Kvale &

Brinkmann, 2009; Merriam, 2009; Yin, 2016). Residents of the Bilimah Community, government functionaries responsible for disaster emergency management, and all other available stakeholders, who were knowledgeable about disaster emergency management, participated in the interviews; the number of research participants was 25. The first phase was one-on-one, face-to-face, and I followed it up with the second phase, which was focus group. Both phases strengthened the process of triangulation to enhance validity and reliability. I stored the culminating data, which were accessible only to me to ensure confidentiality (Kvale & Brinkmann, 2009; Merriam, 2009).

While pursuing the first and second phases of interviews, I continued to collect and read through available documents and archival reports, thereby pursuing an iterative process of observing and taking relevant notes. In qualitative research, taking notes while exploring multiple sources ensures the freshness of data (Creswell, 2013; Merriam, 2009). After the data were fully gathered, I processed them through NVivo. NVivo is a qualitative data analysis program, which is normally referred to as Computer Assisted Qualitative Data Analysis Software. CAQDAS helps users organize and analyze non-numerical data (Creswell 2013). NVivo supports and enhances data formats, such as audio files, digital photos, rich text and social media data. Because NVivo embodies these characteristics of organizing and enhancing the analysis of data, it was advantageous for me.

I gathered a huge amount of data from community residents, government functionaries related to disaster emergency management, and other relevant stakeholders. I explored the data, first, to formulate general themes, and, second, to consolidate emergent themes (Kvale & Brinkmann, 2009), leading me to understanding and explaining the efficacy of the Liberian

government's strategies for disaster emergency management and the applicability of Barton's (1969) collective stress theory and Edwards' (1998) varied response theory.

Additionally, I paid attention to matters of internal and external validity. With regard to internal validity, I used a robust process of triangulation to ensure the accuracy of the interviews and observations (Bekhet & Zauszniewski, 2012). Through the process, I ensured the aligning of the purpose of the study and the research questions, which are integral to the research design (Creswell, 2013; Yin, 2016). In terms of external validity, I understand that unlike quantitative research, which allows for generalizability to populations other than populations focused in particular studies, qualitative research generalizes only to the population of a particular study (Creswell, 2013; Yin, 2016). However, depending on how the data of the study are organized, and depending on how systematic the field notes are organized, succeeding researchers may replicate the study to their own populations. The findings may then be used to strengthen the validity and reliability of my study. In short, how well I handled internal and external validity will strengthen issues of dependability and confirmability of the findings (Creswell, 2013; Kvale & Brinkman, 2009; Merriam, 2009). The ensuing figure summarizes the data collection and analysis plan of the study.

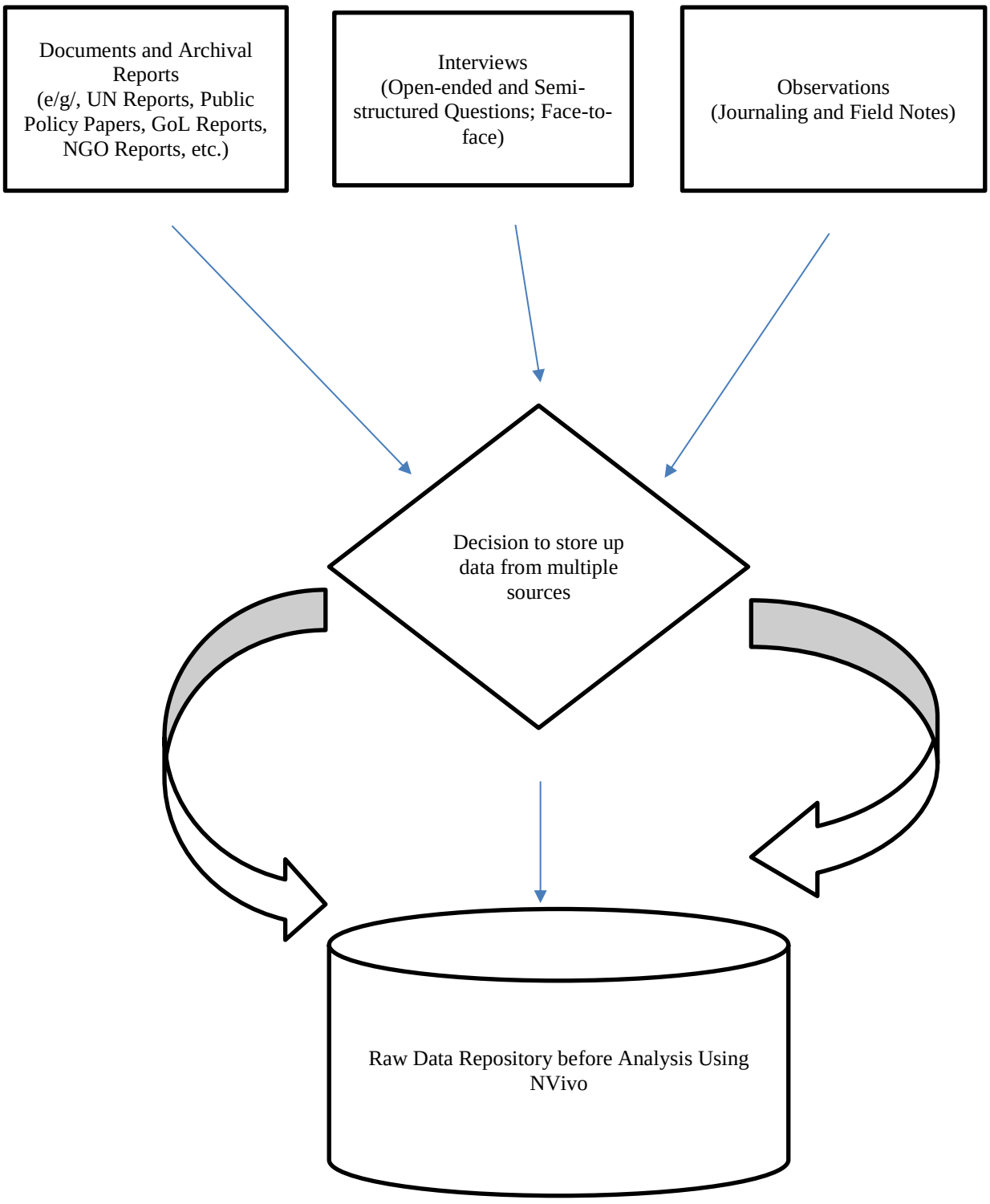

Figure 1: The data collection plan

Trustworthiness and Ethical Procedures

Ethical Procedures

Because I used human subjects in the study, I needed to conform to requirements established by the Walden University Institutional Review Board's certification of "Protecting Human Research Participants" through the National Institute of Health, which was renewed in 2013. Consistent with the requirements of the IRB, I informed participants about issues of compensation, volunteerism, and forced participation. They learned that a) All affirmed research participants were free to participate in the study; (b) They could leave the interview if and when they chose, and they would not be penalized; and (c) There would not be financial rewards for participating; however, findings from the study would help policymakers craft useful environmental policies that could benefit the community and the entire (Creswell, 2013; Kvale & Brinkmann, 2009).

Over the years, researchers using the qualitative method of research have wrestled with the challenge of producing research findings void of glaring biases, because of the researcher's role as both the collector and the interpreter of data (Creswell, 2013; Rajendran, 2001). Hence, a few ground rules may be applied to strengthen reliability and validity (Miles & Huberman, 1994; Patton, 2004). These ground rules include a) determining types of biases, such as personal beliefs, skewed questions and reportage at the start of the study, to take precautionary measures; b) acknowledging a research design which seeks to account for the scope and limitations, sampling types and techniques, etc.; c) making sure responses are reliable and accurate, and treating research participants with respect, with no intimidations for desired answers; d) ensuring that there are no errors in the results, by reviewing emergent variables ; and e) recording results

properly and using both member-checking and peer-review in order to reduce the level of biases (Miles & Huberman, 1994; Patton, 2004; Rajendran, 2001).

Summary

For the current study, I collected ample data, analyzed, classified, and appropriately coded them to determine relevant themes useful for the discussion and the findings. In qualitative research, while findings from the study may not be generalized to population outside of the study, available data and the findings may facilitate replicability (Creswell, 2013; Kvale & Brinkman, 2009; Merriam, 2009; Yin, 2016). Thus, succeeding researchers may have the opportunity to replicate the study to strengthen the validity and reliability of the findings. Whereas Chapter 3 focused on matter of research method, design, and protocols of data collection and analysis, Chapter 4 will explain what data was collected and analyzed to help me, as the researcher, answer the research questions.

Chapter 4: Results

Introduction

In Chapter 4, I focus on data analysis and findings of the research. The purpose of this qualitative research with grounded theory design was to explore and understand perceptions of residents in the Bilimah Community, regarding the efficacy of strategies reportedly initiated by the Liberian government for flood disaster management. The Bilimah Community is in Montserrado County, one of 15 counties in the country and home of the nation's capital. The overarching focus of the study was to understand not only how flood disasters have impacted the Bilimah Community but also how the inhabitants have reacted to the aftermath. The community has a population of about 30,000 people.

The study encompassed flood disaster incidences of the past decade. Whenever it floods in Monrovia, most of the residents are displaced, huge amounts of property are destroyed, and social and economic interruptions take a toll on the Bilimah Community's residents. In the study, I wanted to explore and understand the perceptions of residents as to how leaders of the local municipality and national government often respond to flood events in the community.

I now provide results from the study, including a summary of the setting of the data collection and the recording methods. The two core research questions of the study were the following:

RQ1: What, according to residents of the Bilimah Community in Liberia, is the efficacy of the Liberian government's strategies for the emergency management of flood disasters?

RQ2: Consistent with Barton's (1969) theory of collective stress and Edwards' (1998) varied response theory how does the Bilimah Community in Liberia cope with flood disasters?

Setting

Twenty-five interviewees participated in the study. Twenty of the 25 participants came from the Bilimah Community, and five came from relevant government institutions and non-governmental organizations (NGOs). I used an audio recorder and an assortment of paper, pens and pencils in the study. Each time I used the audio recorder, I requested the consent of the research participant. I also interviewed individuals from relevant government entities and NGO entities knowledgeable about flood events in communities such as the Bilimah Community. The government entities I interviewed included National Disaster Management Agency (NDMA) under the Ministry of Internal Affairs (MIA), Environmental Protection Agency of Liberia (EPA-L), Ministry of Public works (MPW). The Africa Environmental Watch (AEW) and the Liberia Red Cross were two NGOs I also interviewed.

Including those entities was necessary to assess their responses to issues of flood disasters in communities such the Bilimah Community. Responses from the often-affected residents, on the one hand, and policymakers, on the other hand, helped reduce the possibility of needless biases, thereby ensuring a sense of balanced treatment of data. Additionally, that sense of balanced treatment of data helped strengthen the validity and reliability of the findings. I conducted interviews for the study at venues mutually agreed upon. Between May 5 and 14, 2017, following Walden University Institutional Review Board's (IRB) approval of the research, I also reviewed documents from public libraries and conducted an observational tour.

Demographics

For the study, I interviewed a total of 25 participants. Twenty of the 25 came from the Bilimah Community. Fifteen of that 20 participants came from Bilimah Community, specifically from three sub-locales, including Samuel Doe, Watusa Town, and Stockton Creek. The

remaining five participants of the 20 constituted the focus group. The remaining five of the 25 comprised of three government entities and two NGOs. The three included the Ministry of Internal Affairs (MIA), the Environmental Protection Agency of Liberia (EPA-L), and the Ministry of Public Works (MPW), while the two NGOs included the Liberian National Red Cross (LNRC) and the Africa Environmental Watch (AEW). Appendix B contains a summary of the demographics.

Furthermore, I considered issues of gender and age in configuring the research participants. The minimum age of participation in the study was 18, Liberia's legal age. The research participants comprised of twelve women and 13 men.

Information Data

I used as a guide a set of semistructured questions to ensure co-constructive process. This approach creates the level of confidence allowing research participants to speak freely and honestly (Kvale & Brinkman, 2009; Merriam, 2009). Besides field notes, I drew information from documents and archival reports from public libraries. All these helped strengthen the process of triangulation.

Data Collection

Data collection is the systematic approach to gathering and measuring information. In qualitative research method, data is collected from a variety of sources to get a complete and accurate picture of the area of interest for which the researcher answers relevant questions, evaluates outcomes and derive useful findings (Creswell, 2013; Merriam, 2009; Yin, 2016). To follow the requisite protocols and ensure credibility, I pursued the following: (a) Walden University Institutional Review Board (IRB)'s approval for the study protocols; (b) select and evaluate research participants; (c) apply the instruments and materials; (d) collect the data; (e) do

member-checking to verify and ensure researcher's appropriate interpretation of participants' responses; (f) carefully assess and evaluate the data for accuracy; (g) arrange and categorize the data; and (i) interpret and report the findings (Kvale & Brinkman, 2009; Yin, 2016).

I met all purposes, intentions, and scope of the study. Moreover, I appeared at agreed locations and met face-to face with a cross-section of community leaders and residents to discuss a few major aspects of the study. For example, I reviewed the nature and benefits of the study in three separate locations, including Samuel Doe, Watusa Town, and Stockton Creek of the Bilimah Community. I distributed flyers for the study. I ensured a clearer understanding as to the purpose, benefits, and ways in which participants would contact the researcher if they were disposed to taking part in the interview. Appendix C contains a copy of the informed consent.

After the initial meeting and identifying potential research participants, I had them sign or approve of the informed consent forms. Next, I began the interviews, using snowballing techniques. These are techniques used to find new leads from one accessed potential participant to another (Patton, 2004). I transcribed all interviews and secured the data on a computer to ensure freshness and accuracy for the analysis of the data (Yin, 2016). Appendix D contains a summary of interview proceedings. I also used relevant documents and archival reports from public libraries in Monrovia, Liberia. Furthermore, I took an observational tour through Watusi Town and saw impacts of floods in communities such as Bilimah.

Four separate interview protocols were applied to each group of research participants. The minimum time duration for an interview was 30 minutes, while maximum time duration was 65 minutes. The focus group of five persons had combined time duration of 167 minutes. The average time for individual interviewees was 40.6 minutes. I conducted five interviews (BC-SD-1 –SD-5) in Samuel Doe Town, Bilimah Community; five interviews (BC-WT-6—WT-10) in

Watusi Town, Bilimah Community; and five interviews (BC-SC—11- SC-15) in Stockton Creek Town. In Samuel Doe Town, I also conducted a focus group session comprising of five persons. This town comprises of the largest demographic of all the towns in Bilimah. Appendix E contains a summary of the research participants' responses. Government ministries or agencies were equally essential to the study, chiefly for reasons of triangulation and enhancing the validity and reliability of the findings. Irrespective of the location, I accorded all research participants with the respect consistent with the established protocols for the interviews, including the protocols of informed consent and assurance of confidentiality.

Data Collection

Unusual Circumstances in Data Collection

Some of the participants and I encountered challenges with traveling due to the inaccessibility of roads; the raining season made several roads impassable. It took longer time to arrive at certain locations, which by all measures affected the start time by two to three hours. Because of the inclement weather, the Stockton Creek venue had to be slightly changed to another venue, but in the Stockton Creek vicinity. Furthermore, consistent with snowballing techniques, I made attempts to find leads to more potential participants. In a few instances, I had minimum success. The first reason was that there were poor weather conditions around the time I inevitably scheduled my research tour. The second reason was that some of the participants did not know the specific addresses of the suggested names. Some of the research participants were technologically challenged. This condition impaired the tracking of home locations of suggested names and easy access. Fortunately, though, I obtained ample information and, therefore, the integrity of the data which I collected was not compromised.

Field Notes

I conducted an observational tour in the Watusi Town vicinity to explore and understand the impact which rains and floods have had on the residents and the community, and how the residents have dealt with both the collective stress and various stress responses as a result of constant rains and floods in the community. I observed some of the hazardous conditions posed by cluttered drainages. For example, because of clogged drainages during floods peak time, they do more destruction. Additionally, most of the homes are poorly built with no standard engineering concepts – lack of proper foundation and other sound building practices, resulting in home flooding.

The documents and archival reports retrieved from public libraries were insightful. I learned the lack of permit system for especially those constructing residential homes remains a serious problem (AEW, 2011). Migration of Liberians from the rural areas to the urban areas for greener pastures and for security from the war heightened urban congestion, leading to enormous vulnerabilities during floods. The foregoing observation clarified participants' concerns about the seriousness of flooding in the Bilimah Community.

Data Analysis

This section of the research extends beyond the mere description of the data collected from the transcripts of the 25 research participants, including individual residents, the focus group in the study, interviews with governmental institutions, the NGOs documents and field notes. The section focuses specifically on the analysis of the data. For the purpose of the analysis, three key themes have been extrapolated with the aid of NVivo qualitative software. These include (1) impact of floods on residents and households; (2) aid from government and NGOs during and after floods; and (3) intra-community assistance.

These broad themes helped me clearly understand (a) what policymakers have been doing to address challenges emanating from the floods, (b) the residents' perceptions of the impact of the floods, and (c) approaches to ameliorate the impact in terms of the collective stress, economic and social impacts to lives of residents, and what they would like to see done about positive social change.

Impact of Floods on Residents and Households

As part of the tropical region in West Africa, Liberia is prone to annual rainfall that normally runs from May through October. For over a decade, the raining pattern has changed significantly in frequency and intensity, making flooding a very serious challenge for the most part (UNDP, 2010). Participants BC-SD-1 and BC-SD-2 observed that

> For the past 10 years, the community has been experiencing heavy rainfall that at times leads to major flooding. It has been raining every year with high intensity and frequency. Raining season which runs from May to October of every year has created heavy flooding in every part of the Bilimah Community. During this period, the community is virtually under siege for almost three months of the raining season.

Participant BC-SD-3 explained that most times residents are barricaded in their homes until the flood naturally subsides, thereby interrupting movement, social services, and economic arteries to the residents of the community. Other participants (e.g., BC-WT-2, SC-15, & FG-16-20) have observed further that most of the residents in the community are self-employed; therefore, the floods usually pose a challenge to supporting households by heads of households.

Participants BC-SD-3, BC-SD-4, and BC-SD-5 also explained that the most devastating aspect is that the floods often disrupt commercial activities; many merchants are unable to sell their goods and services. Participants of Watusi Community, including SD-W-6 –W-10, shared

similar sentiments. They indicated that when it floods, most families lose their belongings or are even displaced for some time. These participants said that at times they have to use eight-inch blocks to elevate boards on which to sleep at night.

Added to a break in commercial and related activities during the floods, there are often health problems. One of such problems is the water which people drink. The floods transport debris, human and animal feces, and other contaminants into tributaries that serve as sources of drinking water. These floods also make wells for drinking water unsafe because during floods, the water table often rises. The potential contaminants contain water-borne diseases (Ministry of Health & Social Welfare [MH&SW], 2010). Another of the health problems is the tropical illness known as malaria. During the floods, there is an increase in the population of mosquitoes. Mosquitoes become prevalent because they inhabit stagnated bodies of water, which in turn become breeding spots for malaria. Malaria is often a major cause of death. In Liberia, about 3,000 children die yearly from malaria (MH&SW, 2010; Somah, 1994).

Several participants (e.g., BC-SC-11, BC-SD-2, & BC-SC-3) explained that during floods, mosquito bites are on the increase, but unfortunately help does not come in, as much as community residents would like in order to avert malaria and related illnesses. BC-SD-4 stressed that in most instances, residents do not receive ample help from either local government or the national government.

Many residents in these communities are not employed; therefore, they usually depend on crop sales derived from their gardens in order to take care of their families. Thus, as BC-SC-5 explained, residents usually feel disappointed when the floods come in, because these floods also destroy residents' crops. The most frustrating point of it all, BC-SC-5 said further, is that the community continues to live through painful ordeals each year, with no end in sight. As will be

shown further, the focus group re-echoed these central concerns related to economic and health matters.

Government and NGOs Aid During and After Floods

At the peak of the rains, floods affect the Bilimah Community in numerous ways, not the least of which is the means of livelihood. During the floods, the community appeals to both local and national governments, but often the residents receive a lackluster response. Policymakers sometimes renege on government's fiducial responsibilities to the community and its people, failing to realize that disasters usually become a national security issue (AEW, 2011). Disasters threaten lives and undermine the peaceful co-existence of residents. The protection and safety of residents and a community rest in the hands of government (Niskanen, 2005). It therefore begs the question about why the Liberian government has not, according to numerous research participants, done enormous work to protect residents in communities such as Bilimah and its sub-locales. As several examples of participant responses have indicated, there is an apparent systemic neglect or lack of political will to treat disaster management issues with urgency.

As articulated by participants from all segments of Bilimah interviewees (e.g., BC-SD; BC-WT; BC-SC, & BC-FG), local and national government functionaries have given very little attention to the plight of residents and the community during flood disasters. Participants MPW-21 and EPA-22, both of whom are from government entities, somewhat concurred that little has been done to protect vulnerable communities from flood disasters. However, these representatives from the government entities were quick to explain that the years of war, followed by the outbreak of Ebola, overstretched resources of national government in its capacity to provide the needed infrastructures and human capital for flood disaster mitigation, preparedness, and recovery. In most cases, the government relies on its partners to help. In fact,

NDMA-23 observed that National Disaster Emergency Management Agency (NDMA) does not have the resources and capacity to deal with all flood-related issues during the raining season.

While it was noted that NGOs and other humanitarian organizations do help at times when disasters occur, their aid is often limited. They usually provide temporary relief, such as food and clothing, to very few victims, due to limited resources. What has been often lacking is how to prepare the community for resiliency and capacity building initiatives. The use of a Community Emergency Response Team (CERT) could be very significant. CERT, according to Barton (1969), does provide educational awareness for community residents to serve as their own first line of defense.

It bears repeating that Liberia has been facing a litany of disaster issues of various types, especially flooding, since the 1970s, but, as noted in Chapter 3 of the study, the current intensity and frequency is nearly unprecedented. With key policy issues left unattended, the situation in poor urban communities has remained very serious. For example, no building code regulations exist. Where such exists, there are no enforceable mechanisms. The corollary is congestion. Structures are erected, in most cases, without permits. There are often makeshift structures and poor drainage systems. In short, numerous inter-related problems ought to draw the attention of policymakers in Liberia as they seek to make the conditions of life better. Some of these problems include political instability, the lack of political will, high rates of unemployment, high cost of living, poor governance, and, of course, global warming.

Intra-community Help

Disasters in any community, especially when lives are at risk, become a national security issue because such disasters threaten residents' core existence, undermine movement, and disrupt normal social and economic services that in some instances lead to socioeconomic and

sociopolitical discontent. When disasters occur in a community, in most instances people's lives are impacted in serious ways. Therefore, community residents must be adequately prepared and trained as the first line of defense to minimize the impacts of flood disasters. Such an effort means the community must be trained to apply a program such as the Community Emergency Response Team (CERT). While it is true that the Liberian government should be expected to handle a substantial part of the responsibility to protect communities against flood disasters, communities have a collective responsibility to themselves.

With regard to community responsibility to itself, BC-SC-4, one of the research participants, observed that during flood disasters community members, especially the youth, do help at times. When it rains heavily and the area is flooded, community youth help by canoeing stranded residents onto the main roads to purchase food and other goods. BC-WT-3 and BC-FG-17 explained that community residents want to do more, but the challenge has always been the lack of resources from functionaries of local and national governments. Youth groups, many of whom are unemployed, do have the desire but do not have the resources to provide more relief services during and after floods.

Participant BC-WT-1, likewise, noted that residents know when the raining season occurs, which is May through and October every year, and most of the residents are usually willing to become proactive by, for instance, packing sand bags to reduce the impact of each flood incident. However, the lack of money and other resources usually becomes an obstacle. BC-SD-5 observed that if national government can help, more can be done to minimize the impact of each flood disaster. Additionally, BC-FG-16, -17, and -20 explained that if national government empowers community residents, by establishing disaster mitigation initiatives in the community, more volunteers would help protect their communities in times of flood disasters.

AEW-25 also explained that the desire for community residents to help during floods is felt among the youth but they do need much help from the national government. This population segment of the community should be equally afforded basic training to carryout fundamental preparedness, prevention, and response practices during and after a flood disaster. LRC-24 agreed that because the raining and flooding situation is an annual event, it would be in the best interest of the government to put in place a community emergency response team (CERT) that would prepare residents in times of flood emergencies.

Residents of the Bilimah Community have acknowledged that NGOs have remained somewhat dependable. However, they are aware that these NGOs cannot replace the national government. Just as NGOs perform their share of responsibility, the national government must also perform its share. A productive first-line set of strategies should be initiated to help communities such as Bilimah handle flood disasters. Other challenges that have equally impacted the Bilimah Community have been in the areas of health and the environment. These conditions linger and help exacerbate the plight of the residents. In the absence of fundamental infrastructures and community-driven preparedness and awareness initiatives for protecting the community, there cannot be social progress or economic prosperity.

Evaluation of Findings

A few authors (e.g., Kvale & Brinkmann, 2009; Yin, 2016) indicated that evaluating findings of a study strengthens both an understanding and the importance of the data collected. The current study was framed around two key theories. One was Barton's (1969) theory of collective stress, which encourages a multidimensional analysis of situations of disasters or emergencies. The multidimensional analysis focus on eight areas, namely, (1) communication about collective deprivation; (2) victims' communication about their own deprivations; (3)

knowledge of the extent and intensity of deprivation; (4) sympathetic identification with victims; (5) subjective deprivation; (6) blaming victims; (7) moral standards requiring helping; and (8) helping behavior.

The second theory was Edwards' (1998) theory which indicated that often during disasters, there is a variety of stress levels driven by multiple factors. For example, people's responses vary according to environmental factors. Those responses also vary according to family, community, social, and other cultural factors. The theory therefore emphasized that policymakers pay attention to applicable policies through rigorous research to understand the stress levels and provide the most tenable responses. Barton's and Edwards' theories were essentially useful in addressing the research questions related to understanding the efficacy of the Liberian government's strategies to address the flood disasters and how residents of the Bilimah Community have been able to heal from such disasters.

For example, through Barton's (1969) theory, it became understandable how the residents of the Bilimah Community perceived the efficacy of the GoL's disaster emergency strategies. They underscored the severity of flood disasters and yet the absence of significant assistance coming from external sources, even including the Liberian government.

With regard to the strategies of the GoL on disaster emergency management, Edward's (1998) theory clarified the link between socio-cultural and environmental factors, on the one hand, and effects of each flood disaster, on the other hand. These factors and the effects are linked by the expectations which every resident or each group of residents has when a flood disaster occurs. While there may be others who have high expectations for external help during flood disasters, there may be others who may not have high expectations because of the experience of prior neglect from their national government. In that situation, this latter group

may desire to initiate self-help. This is where community empowerment may become useful. The more community residents feel the absence of external help, the more they can likely galvanize themselves to initiate internal help It therefore requires emphasis on paradigm shifts in policy orientation and practice. Such paradigm shifts need to be driven by research and education related to disaster preparedness, prevention, response, and recovery.

Effective Policy Implementation

The theories advanced by Barton (1969) and Edwards (1998) provide substantive understanding of the case being made for communities such as Bilimah and its sub-locales. Through this research, I have understood that disaster emergency management practices in Liberia were never given a significant attention for over a century and half of the country's existence. Yet, current incidences of dismal climatic conditions have begun to slowly drive the conversation with the help, for example, of the United Nations Development Programme (UNDP). For at least 10 years, UNDP engaged with the Liberian government over a draft document, concerning the establishing of an environmental protection agency. It was not until 2016 when the Liberian government finally approved the document. However, up to the concluding of the current study, the agency is not yet operational due to the lack of funding (GoL, 2012). It therefore begs the question, regarding when and how communities, such as the Bilimah Community, will receive the requisite relief during flood disasters. Without government intervention to provide the necessary infrastructures and effective policy initiatives, the challenge of effective strategies for productive disaster emergency management may persist.

Addressing health and environment-related problems, such as congestion, poor drainage and, weak garbage collection and disposal systems require sound public policies and a strong political will (AEW, 2011). For example, the current political structure of Liberia is such that

almost all of the local government structures do not have an independent system of governance to collect and utilize local taxes. As such, they do not have the capacity to support local program initiatives. Local municipalities, such as the Bilimah Community, are supposed to receive certain budgetary allotments from the national government as development funds through the superintendent of each county, who is expected to disburse such funds to the local government authority. However, such funds, in most instances, are never received by the local government functionaries; such is the case of the Bilimah Community local government (AEW, 2011).

In the absence of very responsive political infrastructures, the Bilimah Community, like many other communities in Liberia, will remain vulnerable to the many social and economic challenges, all of which thrive because of national government's seeming inability to fulfill its national obligations for the well-being of communities and residents.

Evidence of Trustworthiness

Throughout the entire research process, I remained the primary instrument for the collecting and analyzing of the data. I paid attention to the importance of encoding and interpreting, the final results. For example, I employed the NVivo 11 data analysis tool. Additionally, I paid attention to member-checking to authenticate all responses from the research participants. For example, I provided a copy of each research participant's response for review and verification (Newton & Rudestam, 2007). I also used peer review when it was necessary for verification. All these steps ensured triangulation, which helped enhance matters of validity and reliability. I hope that efforts towards the vigor and strict adherence to established protocols may assist other researchers to compare and reference the findings of this study for further research in other communities in Liberia, related to issues of disaster emergency management.

Summary

Using two core research questions, namely, (1) what, according to residents of the Bilimah Community in Liberia, is the efficacy of the Liberian government's strategies for the emergency management of flood disasters? and (2) Consistent with Barton's (1969) theory of collective stress and Edwards' (1998) varied response theory, how does the Bilimah Community in Liberia cope with flood disasters? I derived three key themes from collected data. These included (1) impact of the floods on residents and households; (2) government and NGOs aid during and after floods; and (3) intra-community help.

With the first theme, I wanted to understand the multiple impacts which the Bilimah Community often experienced during flood disasters. With the second theme, I wanted to understand the efficacy of strategies initiated by national government and NGOs to bring relief to communities such as Bilimah. With regard to the third theme, I was interested in how residents managed stress emanating from floods. It was necessary to understand how community residents got involved to help themselves. It was additionally necessary to understand whether national government was interested in providing residents training germane to empowering them for situations of disaster management. The findings are that national and local governments have had minimal engagement with the Bilimah Community during flood disasters, leading to the proposition that the more the absence of external help is felt, the more the desire for internal help, which will be galvanized by the residents themselves. Equally, without enormous resources, the community and the residents have not been fully empowered through a program, such as CERT, to act as the first line of defense to pull themselves out of immense consequences of flood disasters.

The research questions of this study generated meaningful data from the participants. These data grounded my findings with regard to understanding the socioeconomic impacts which residents of the Bilimah Community suffer during flood disasters, leading to the realization that the more community residents feel the absence of external help, the more they can likely galvanize themselves to initiate internal help. The data are also important to considering a crucial point: Where and when a community exists among major business entities and close to the seat of national government, but cannot often receive assistance that addresses the dire need of relief when disasters such as floods, occur, that community may resort to desperate means for self-sustenance. Residents, particularly from the Bilimah Community, articulated their concerns that both the local and national governments have not been paying enough attention to their plight. It would be a sound policy initiative if national government formulated proactive programs that would avert needless socioeconomic and sociopolitical discontent. It is high time national and local governments worked together to ensure substantive relief to communities impacted by flood disasters.

There is a need for disaster management mitigation programs to strengthen initiatives of community emergency response teams. Such initiatives will provide awareness, first, towards prevention and preparedness, and, second, towards recovery. If nothing is done to ensure readiness when floods occur, it is uncertain whether communities, such as Bilimah, will survive dismal climatic conditions for long in Liberia to thwart the temptation of agitation. Chapter 5 focuses on implications, recommendations, and conclusion of the study.

Chapter 5: Implications, Recommendations, and Conclusion

Introduction

The current study focused on the Bilimah Community in Liberia. This community is one of many communities in urban Liberia, which are often impacted by flood disasters (United Nations Development Programme [UNDP], 2010). As a developing country, Liberia seems to lack adequate resources to develop enormous and relevant infrastructures for disaster emergency management, to establish skilled human resources, and to build individual communities' capacity to serve as self-help and first-line responders to flood disasters. However, what is even more exacerbating is the apparent lack of political will to make a substantive effort Ministry of Information [MICAT], 2012). The need to strengthen communities through strategies, such as community emergency response teams (CERT), is extremely crucial. Such teams provide first line of defense to protect lives and property (Barton, 1969).

As a sovereign nation, Liberia has yet to establish a fully functional disaster emergency management agency (Africa Environmental Watch [AEW], 2011). Such an agency would design, implement, and support mitigation policy initiatives that would support communities to deal with flood incidences, which occur annually during the raining season (AEW, 2011). The lack of such institution, effective policies, and infrastructures to deal with flooding and associated challenges has been deeply rooted in Liberia for very long time. Since 1847, the founding year of the nation, there has been no substantive, definitive policy on disaster mitigation and environmental management (Environmental Protection Agency of Liberia [EPA-L], 2011). The need for related and pertinent institutions and infrastructures did not seem urgent in the early 1900s (EPA-L, 2011). By the early 1960s, when multinational companies, such as Firestone Rubber Company, LAMCO, and BMC and other mining companies began operations

in Liberia, hazardous indicators started to surface at different stages (AEW, 2011; van der Kraaij, 2015). Even at the level of these companies' operations, there was apparently little interest on the part of government to focus on good quality protection of the environment (AEW, 2011). Activities of the companies remained unchecked by national government. Policies for sound, productive, proactive approaches did not seem to claim the national government attention (EPA-L, 2011). After almost 50 years, poor environmental conditions and disaster incidences remain a challenge and threat to communities, such as the Bilimah Community in Liberia (AEW, 2011).

In 2008, the first working draft document for disaster management was prepared and the discussion began for the creation of a National Disaster Management Agency (NDMA), through a joint effort between the Government of Liberia and the United Nation Development Programme (GoL-UNDP, 2009). After seven years, the NDMA was created and signed into law in 2015. However, the law has not become fully functional because there have not been the relevant budgetary allotments. The Environmental Protection Agency of Liberia (EPA-L) falls in a similar situation. Established in 2003, EPA-Liberia did not become somewhat functional until 2006. Even with the establishment of EPA-L, bureaucratic complications have rendered the agency ineffective. The Bilimah Community, which is the focus of the current research, remains a victim of these problems of apparent governmental neglect. The problem, which the Bilimah Community is facing, is a microcosm of a bigger problem found in the entire country. Liberia is not effectively implementing initiatives for disaster mitigation in communities to better prepare them for proactive measures related to flood disasters.

The purpose of this qualitative study with a grounded theory design was to explore and understand perceptions of residents in the Bilimah Community in Liberia, regarding the efficacy of strategies reportedly initiated by the Liberian government for flood disaster management.

Findings from the study have highlighted the urgent need to save the residents of the Bilimah Community, and perhaps other communities that are experiencing similar problems related to flood disasters. The national government needs to effectively exercise its fiduciary responsibility of protecting and save the community from the current state of peril (AEW, 2011). No community can sustain any developmental initiative under a litany of environmental and disaster management crises impacting communities and regions of a country (Coppola, 2007).

The rest of this chapter will focus on the insights and implications of the findings of the current study. In this study, I sought to contribute to a clear understanding of not only how the Bilimah Community and Liberia by extension are being challenged by heavy rains and flooding but also what can be significantly done to empower communities and residents to approach flood situations with ample resolve. Findings of the study could contribute to critical documents necessary to formulate policies and strategies for people's empowerment. Policymakers, political leaders, NGOs, and other philanthropic organizations and stakeholders could benefit tremendously. Figure 2 contains highlights of the findings.

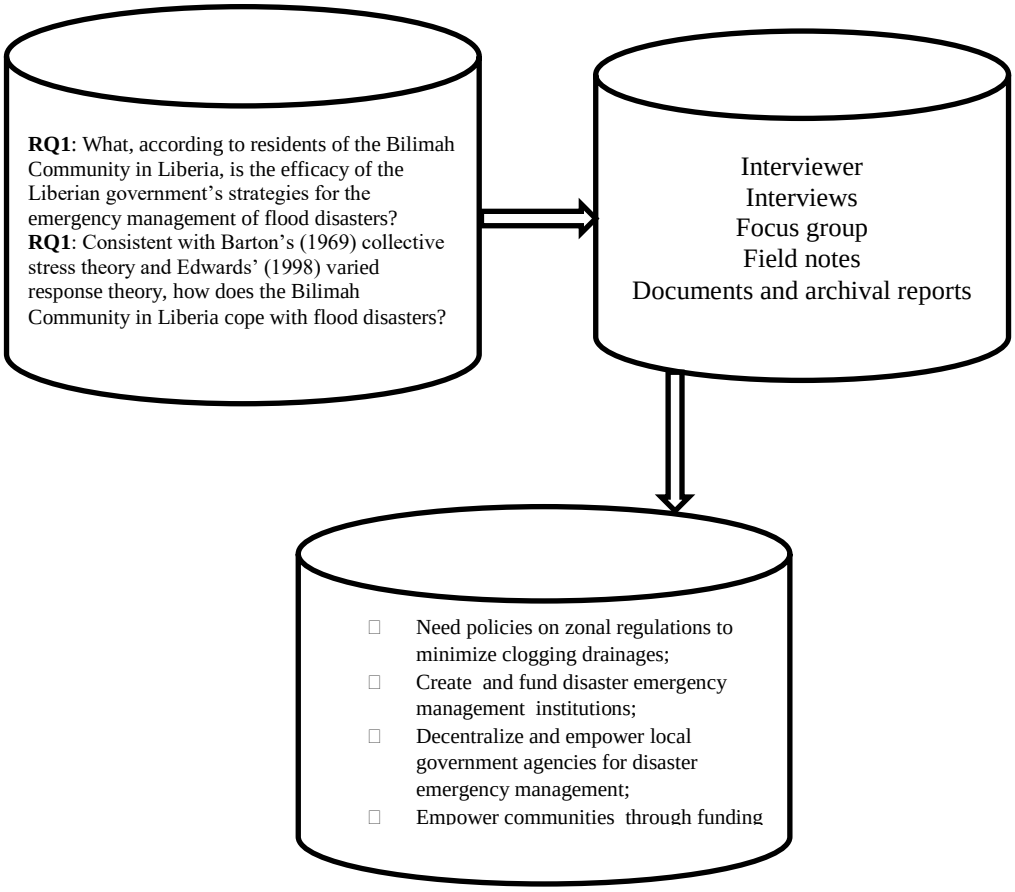

Figure 2: Framing the research questions, sources of evidence and then some key recommendations.

Interpretation of the Findings

It is a common phenomenon that when disaster occurs, it usually does affect multiple communities; therefore, each community should be adequately prepared to deal with the impacts of disasters, with regard to preparedness, prevention, response to and recovery from disasters (Kirschenbaum, 2004; Haddow, Bullock, & Coppla, 2008). In that context, Barton's (1969) theoretical framework, on collective stress and community transformation becomes applicable. Barton (1969) argued for the relevance of "Community Emergency Response Team (CERT)" to serve as a transitory social system that provides neglected communities the help as the first line

of defense in disasters such as flooding, earthquakes, tornado, etc. Barton encouraged a multidimensional analysis of situations of disasters or emergencies. CERT, as proposed by Barton, can be made permanent with routine capacity building. It would serve as an internal support base that would help reduce or prevent any disaster impact on a given community.

In similar context, Edwards' (1998) theoretical framework also emphasized a look at issues related to the connections between individuals and the systems in which they are embedded, and how the systems influence people's varied responses to disaster. Edwards, then, advanced recommendations for policy enhancement, awareness, and preparedness for disaster recovery.

I used Barton's (1969) and Edwards' (1998) theories to explain answers to the research questions of my study. The two questions were to help me understand the efficacy of the Liberian government's strategies to address flood disasters and how residents of the Bilimah Community often deal with impacts of flood disasters.

I adapted the concept of thematic analysis, using the NVivo qualitative software as the method of analysis. The data analysis generated three themes that were related to the problem and resolution to disaster management initiatives in the Bilimah Community. They included (a) impact of floods on residents and households; (b) government and NGO aid during and after floods; and (c) Intra-community help.

Impact of Floods on Residents and Households

The intent and emphasis was first to clearly understand the duration, intensity, and frequency of rain and flooding in the community. Second, I intended to understand the level of severity and the impact on residents and the community as a unit.

Government and NGO Aid During and After Floods

Here, I sought to understand what the government, both at the national and local levels, has been doing to address flooding crises in the Bilimah Community. I also explained how NGOs factored into bringing relief to this community. With regard to government's intervention, I learned, based on Liberian political structure, that all financial support emanate from the national government, which in turn filters to the local government. Most municipalities are not authorized to collect tax revenues. Thus, if the local jurisdiction does not receive funding from national government, no development takes place. This arrangement exacerbates the plight of communities such as Bilimah. Regarding NGOs, most of the 20 of the 25 research participants suggested that only a few NGOs were usually responsive. Often, the help they often brought in was minimal and temporary.

Intra-Community Help

With regard to residents helping one another, I learned that owing to a dismal shortage of resources; residents had little or no way to mount substantive and substantial help to one another. Whatever help that was mobilized was directed mostly to their most vulnerable members, including the elderly, women, and children, who were often ferried in canoes or assisted with errands. The intensity and extent of such services varied from community to community. Although CERT would prove productive and long lasting, these community residents lacked the technical know-how to use this emergency management strategy.

The participants' willingness to tell stories about their ordeal illustrated their desire for help to learn strategies germane to handling flood situations in the Bilimah Community. Because, as it should be noted, the more community residents feel the absence of external help,

the more they can likely galvanize themselves to initiate internal help. Living annually for almost a decade or more with flood events posed immense challenges to the residents for their well-being and for sustaining their future. The inability of government to address the community's dilemma, regarding flood disasters, begs the question of how much longer the Bilimah Community and other communities similarly situated can live through the flood-related plight. The Liberian government has an important duty to help foster policies to deal with such situations that impede the well-being of residents whose sustainable livelihoods must be secured against all odds.

While the Bilimah Community was the focus of the current study, many other communities, both urban and rural, are also often affected by flood disasters. The Liberian government needs to be a little more responsive. It needs to develop more functional disaster emergency management infrastructures that will effectively provide services in areas of awareness, preparedness, prevention, response to and recovery from flood disasters. Anchored in the social and economic well-being of citizens, the focus on dangers, such as flood disasters, is important. It is a national security issue because it can be exploited by the disaffected and perhaps violent swathe of a national population (Uitto & Shaw, 2016; Waugh, 1990). The indifference therefore needs outmost attention. The inherent benefits for the well-being and protection of the citizens cannot be overemphasized. No nation or community adequately sustains itself without protecting against known and unknown natural and man-made onset of events. When communities or nations fail to establish relevant infrastructures, the consequence can range from massive destruction of human lives and property to complete stagnation of a nation (Kirschenbaum, 2004).

An example can be made of Ebola, the tragic event of 2014, which impacted Liberia and neighboring countries, bringing about enormous destruction and wiping away almost every economic gain made in postwar Liberia. It is a classic example of what can happen when communities or nations neglect to build critical infrastructures that protect against impacts of any disaster. From all indications, the Liberian government has not invested significantly in initiatives for responding to disasters.

Intra-Community Help

With regard to residents helping one another, I learned that owing to a dismal shortage of resources; residents had little or no way to mount substantive and substantial help to one another. Whatever help that was mobilized was directed mostly to their most vulnerable members, including the elderly, women, and children, who were often ferried in canoes or assisted with errands. The intensity and extent of such services varied from community to community. Although CERT would prove productive and long lasting, these community residents lacked the technical know-how to use this emergency management strategy.

The participants' willingness to tell stories about their ordeal illustrated their desire for help to learn strategies germane to handling flood situations in the Bilimah Community. Because, as it should be noted, the more community residents feel the absence of external help, the more they can likely galvanize themselves to initiate internal help. Living annually for almost a decade or more with flood events posed immense challenges to the residents for their well-being and for sustaining their future. The inability of government to address the community's dilemma, regarding flood disasters, begs the question of how much longer the Bilimah Community and other communities similarly situated can live through the flood-related plight. The Liberian government has an important duty to help foster policies to deal with such

situations that impede the well-being of residents whose sustainable livelihoods must be secured against all odds.

While the Bilimah Community was the focus of the current study, many other communities, both urban and rural, are also often affected by flood disasters. The Liberian government needs to be a little more responsive. It needs to develop more functional disaster emergency management infrastructures that will effectively provide services in areas of awareness, preparedness, prevention, response to and recovery from flood disasters. Anchored in the social and economic well-being of citizens, the focus on dangers, such as flood disasters, is important. It is a national security issue because it can be exploited by the disaffected and perhaps violent swathe of a national population (Uitto & Shaw, 2016; Waugh, 1990). The indifference therefore needs outmost attention. The inherent benefits for the well-being and protection of the citizens cannot be overemphasized. No nation or community adequately sustains itself without protecting against known and unknown natural and man-made onset of events. When communities or nations fail to establish relevant infrastructures, the consequence can range from massive destruction of human lives and property to complete stagnation of a nation (Kirschenbaum, 2004).

An example can be made of Ebola, the tragic event of 2014, which impacted Liberia and neighboring countries, bringing about enormous destruction and wiping away almost every economic gain made in postwar Liberia. It is a classic example of what can happen when communities or nations neglect to build critical infrastructures that protect against impacts of any disaster. From all indications, the Liberian government has not invested significantly in initiatives for responding to disasters.

Personal Reflections

Several factors inspired this research. Most of all, conditions I witnessed as a resident of Jamaica Road, part of the Bilimah Community, stirred the inquiry. I witnessed heavy rains and floods that often displaced residents, destroyed homes, disrupted schools for kids, and at times shut down businesses. Furthermore, living abroad in the United States, I have paid annual visits to Liberia and to Bilimah, including surrounding communities. I have done that for the past fifteen years, conducting environmental awareness programs. Thus, having acquire advanced knowledge and a wealth of experience, I felt a compelling need to provide the underserved of society an opportunity to both articulate their plight and together with national government find possible solutions. My past experiences notwithstanding, I decided to remain largely a scholarly listener seeking to understand the narratives the participants were providing in order to collect, decipher, and bring their answers to public attention, thereby intensifying the much-needed national conversation on matters of flood disasters and the environment.

Recommendations

The absence of a strong political will in Liberia towards disaster emergency management and caring for the environment has derived numerous consequences. For underserved communities, such as the Bilimah Community, the absence of the political will has led to needless suffering. Flood disasters have annually destroyed lives and property; such disasters have brought about illnesses. No community or nation succeeds in sustaining its development goals, without a sound workable disaster emergency management plan comprising of robust policies and an enforceable framework. Perhaps findings of the current study will help inspire

that urgency for policymakers in Liberia. To achieve this, the following recommendations may be helpful for an important start. The is need to

1. cultivate a strong political will, leading to the initiating of appropriate public policies with vigorous enforceable mechanisms;
2. establish or strengthen disaster emergency management infrastructures with institutional capacity building opportunities;
3. profile and identify hazardous spots for proactive services;
4. strengthen environmental regulations to ensure building permits, proper garbage collection systems to protect drainages, and zoning ordinances; and
5. prepare community residents as the first line of defense through community emergency response team (CERT).

Conclusion

Only little research has been addressed the issue of flooding and the threats it poses to Liberia's social and economic growth and sustainability. From time to time whenever it floods, residents' social and economic well-being is disrupted for days, if not weeks. The flood impacts have chain reactions to the overall national economy. Flooding remains an annual occurrence. In the past 10 years, the phenomenon has intensified. Nevertheless, the Liberian government has not done enough to muster the political will and vision to invest in disaster management programs and infrastructures to prevent flood impacts. It takes vision and understanding, driven by strong policy initiatives and the much-needed human resources to support disaster management programs which can help to promote and protect economic growth for a community or a nation. According to Haddow, Bullock and Coppola (2008), no community or nation succeeds in its development goals without a sound and an effective disaster management

program. Consistent with this argument, the current research accumulated data leading to findings that could help drive a paradigm shift about how the nation handles disaster management initiatives.

In the case of disaster management initiatives, Coppola (2007) argued that political leadership plays a critical role in policy development and enforcement. The lack of such initiatives is therefore a formula for failure. No nation, regardless of its wealth or influence, is so far advanced as to be fully immune from disaster, for great nations are brought to their knees not by the act of war, but by disasters such as floods, volcano, famine, etc. (Coppola, 2007).

The argument is further advanced that Liberia needs to take a common-sense practical approach to reducing risks associated with disasters; this means identifying the risks, educating, and communicating to communities on related issues. It also means forming partnerships to take action to reduce those risks. The Ebola epidemic of 2014 should serve as a vivid reminder that disaster knows no boundaries and social status of potential victims. According to (UNDP, 2010), over 75 percent of the Liberian population does not know what disaster is and about 25 percent knows little about disaster. Such statistical evidence suggests that the entire population of the nation knows very little about disasters; therefore, whenever disaster occurs, the impact can be severe. The lack of education and awareness about disaster is just as dangerous as the disaster itself.

Unless Liberia adheres to several practical approaches, the nation's chance of making economic progress and sustaining its gains will remain extremely difficult. This study could be the beginning of a new paradigm shift for positive social change in the country, both for the Bilimah Community and many other vulnerable communities

References

Africa Environmental Watch. (2011). Report on Liberia environmental sustainability Retrieved from http://www.trunity.net/africaenvironmentalwatch/topics/view/51efe19a0cf2e8eb0bc97c31/2008.

African Union. (2004). *Disaster risk reduction for sustainability development in Africa*. Retrieved from https://scholar.google.com/scholar?q=africa+regional+strategy+for+disaster+risk+reduction.

Alexander, D. (2015). *Disaster and emergency planning for preparation, response, and recovery.* Retrieved from http://naturalhazardscience.oxfordre.com/view/10.1093/acrefore/9780199389407.001.0001/acrefore-9780199389407-e-12

Barton, H. A. (1969). Community in disaster: A sociological analysis of collective stress situation. Garden City, NY: Doubleday & Company, Inc.

Bekhet, A. K. & Zausniews, J. A. (2012). *Methodological triangulation: An approach to understanding data.* Retrieved from epublications.marquette.edu/cgi/viewcontent.cgi?article

Bennet, S. (2012). *Innovative thinking in risk crisis and disaster management*. Burling, VT Ashgate.

Biernack, P. & Waldorf, D. (2013). *Snowball sampling: Problems and techniques of chain referral sampling*. Retrieved from smirsagepub.com

Brandolini, G & Tigni, M. (2006). *Climate change adaptation in Liberia.* Retrieved from

https://www.climatelinks.org/sites/default/.../liberia_adaptation_fact_sheet_jan2012.pd...

Central Intelligence Agency. (2013). *Liberia.* Retrieved from http://www.CIA.gov./Liberia.

Chenail, R. J. (2011). Ten steps for conceptualizing and conducting qualitative research studies in a pragmatically curious manner. *The qualitative report*, *16*(6), 1715-1732. Retrieved from http://nsuworks.nova.edu/tqr/vol16/iss6/13.

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). London, UK: Sage Publications Ltd.

Coppola, D. P. (2007). *Introduction to international disaster management*. Burlington, MA. Butterworth-Heinemann.

Corbin, J. & Strauss, A. (2007). *Basics of qualitative research: Techniques and procedures for developing grounded theory (3rd ed.).* Thousand Oaks, CA: Sage Publications.

Drabek, E. T. (2004). *Sociology, disasters and emergency management: History, contributions, and future agenda*. Retrieved from https://www.google.com/search?=hpt&ei=vZleWqvJK17YtQw35ITwBQ&q=Drabek+%28229&oq=Drabek+%282004%29&gs

Drakenberg, O., Anderson, F., & Wingquist, G. O. (2013). *Liberia: Environmental and climate change policy brief.* Retrieved from www.sidaenvironmenthelpdesk.se

Economic of West African States. (2006). *The role of regional organizations in disaster risk management.* Retrieved from https://link.springer.com/chapter/10.1057/9781137439307_1

Edwards, M. L. K. (1998). An interdisciplinary perspective on disaster and stress: The promise of an ecological framework sociological forum, 13(1), 115-132. Retrieved from https://books.google.com/books?id=SVU_AAAAQBAJ&pg=PA287&lpg=PA287&dq

Ellis, N. C. (1999). The efficacy of group communication treatment in adults. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/10229456

Environmental Protection Agency of Liberia. (2008). *State of the EPA-L.* Presented at Environmental Conference in Washington, DC. Retrieved from https://postconflict.unep.ch/liberia/index_2a.php?m=2&sm=2a

Environmental Protection Agency of Liberia. (2006). *Post war environmental condition of Liberia.* Presented at AEW Conference, Bowie States University. Retrieved on from www.africaenvironmental watch. org.

Federal Emergency Management Administration. (2008). *Collaborative emergency management: Better community organizing, better public preparedness and response.* Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1467-7717.2008.01037.x/abstract

Fink, S.A. (2000). The role of the researcher in the qualitative research process: A potential barrier to archiving qualitative data. Retrieved from http://www.qualitative-research.net/index.php/fqs/article/view/1021/2201

Fisher, M & Botterill, L.C. (2003). Beyond drought: People, policy and perspective. London, UK. Collingwood, Civ.

Gillispie, D. F. (1988). *Theory of collective stress.* Retrieved from https://books.google.com/books?id=1YzaAAAAQBAJ&pg=PA23&lpg=PA23&dq=Gillispie

Gist R. & Lubin, B. (1989). Ecological and community perspectives on disaster intervention. In R. Gist & B. Lubin (Ed.). Psychological aspects of disaster (pp. 3080340). New York: Wiley & Sons.

Government of Liberia. (2012). *Terms of reference of the national disaster management agency* Retrieved from www.emansion.gov.lr/doc/National%20_4.pdf.

Guba-Sapir, Hoyois, P. & Below, R. (2014). *Annual disaster statistical review of 2014: The numbers and trends.* Retrieved from https://reliefweb.int/sites/reliefweb.int/files/resources/ADSR_2014.pdf

Haddow, D. H., Bullock, J. A., & Coppola, D.P. (2008). *Introduction to emergency management (3rd ed.).* Burlington, MA. Butterworth-Heinemann.

Huberich, C. H. (rpt. 2010). The political and legislative history of Liberia (2 vols.). Clark, NJ: The New Lawbook Exchange, Ltd.

International Federation of Red Cross and Red Crescent Societies (2014). Adapting to climate change and addressing drought – learning from the Red Cross Red Crescent experiences in the Horn of Africa. Retrieved from http://www.ifrc.org.

International Panel on Climate Change. (2010). *Working group II: Climate change 2014 impact, adaptation, and vulnerability*. Retrieved from https://www.ipcc.ch/report/ar5/wg2/

Jackson, B. A., Faith, K. S., & Willis, H. H. (2010). Evaluating the reliability of emergencyresponse systems for large-scale incident operations. Santa Monica, CA: Rand

Jain, A. K. (2008). *A practical guide to disaster management*. New Delhi: Pragun Publications.

Kundzewic et al. (2010). *Flood risk and climate change: Global and regional perspectives.* Retrieved from https://floodobservatory.colorado.edu/Publications/Kundzewicz.pdf

Kvale, S. & Brinkmann, S. (2009). *Learning the craft of qualitative research interviewing*. Los Angeles, CA: Sage Publications.

Liberia Institute of Statistics and Geo-Information Service. (2008). N*ational population and housing census.* Retrieved from

https://www.lisgis.net/page_info.php?7d5f44532cbfc489b8db9e12e44eb820=MzQy

Liberia National Red Cross. (2010). *Red cross strives to meet humanitarian needs resulting from the past conflict*. Retrieved from https://www.icrc.org/eng/resources/documents/update/liberia-update-090710.htm

Maloney. W., Jordan, G. & McLaughlin, A. (1994). Interest groups and public policy: The insider/outsider model revisited. *Journal of Public Policy, 14 (1), 17-38*.

Merriam, S. (2009). *A guide to design and implementation*. Retrieved from http://www.librarything.com/work/17857259

Miles, M. B. & Huberman, M. A. (1994). *Qualitative data analysis (2nd ed.)*. Thousand Oaks, CA. Sage Publications.

Mileti, D. S. (1999). Disaster by design: A reassessment of natural hazards in the United States. Washington, D C: Joseph Henry Press.

Miller, K. C. (2008). Constructing grounded theory: A practical guide through qualitative analysis. Thousand Oaks, CA: Sage Publications.

Ministry of Foreign Affairs (2003). *An act creating the environmental protection agency of the Republic of Liberia.* Retrieved from https://www.google.com/search?source=hp&ei=aJhRWpKSLoynggf34Iq4BA&q=%29

Ministry of Health and Social Welfare. (2010). *Environmental health and water sanitation and hygiene. Retrieved from* https://www.google.com/search?source=hp&ei=RptRWs6rCOLp_Qao-a_YAw&q=Environmental+Health+and+Hygiene+in+Liberia&oq=Environmental+Health+and+Hygiene+in+Liberia&gs_l=psy- .

Ministry of Internal Affairs. (2008). *Over view of Liberia.* Retrieved from

http://www.mia.gov.lr/2content.php?sub=210&related=40&third=210&pg=sp

Ministry of Information, Culture Affairs and Tourism. (2015). *2015 annual report*. Retrieved from http://www.micat.gov.lr/index.php/documents/item/5421-ministry-of-information-cultural-affairs-and-tourism-micat-2015-annual-report.html

Ministry of Planning and Economic Affairs of Liberia. (2010). Annual report 2010. Retrieved from www.undp.org/content/dam/liberia/docs/docs/UNDP_Annual_Report_2010.pdf

National Transitional Government of Liberia. (2005). *The road to economic recovery.* Retrieved from http://reliefweb.int/report/liberia/national-transitional-government-inaugurated-liberia.

Olowu, D. (2010). The hyogo framework for action and its implications for disaster management and reduction for Africa. *Journal of Disaster Risk Studies,* 3 (1), 303-320.

Patton, M.Q. (2012). *Qualitative research & evaluation methods*. Thousand Oaks, CA: Sage Publications.

Rajendran, N. S. (2001). *Dealing with biases in qualitative research: A balancing act for researchers.* Retrieved from http://nsrajendran.tripod.com/Papers/Qualconfe2001.pdf

Sawyer, A. (1992). *The emergence of autocracy in Liberia.* Retrieved from https://books.google.com/books/about/The_Emergence_of_Autocracy_in_Liberia.html

Somah, L. S. (1994). Historical settlement of Liberia and its environmental impact. Lanham, MD: University Press of America.

Starr, F. (1913). *Liberia: description, history, problems.* Retrieved from https://books.google.com/books/about/Liberia.html?id=-7JWAAAAYAAJ

Teea, E. H. & Moe, A. K. (2012). Disaster risk reduction, disaster, vulnerability, resilience, local capacity, gender, women, humanitarian organizations, Liberia. Retrieved from

www.gdnonline.org.

The Economist. (2012).The world in 2012: Democracy and its enemies. Retrieved from http://www.economist.com/theworldin/2012

Uitto, J. I. & Shaw, R. (2016). Sustainable development and disaster risk reduction. Tokyo: Springer.

United Nations Development Programme. (2010). Capacity needs assessment in disaster risk deduction: County, district, and community assessment. Retrieved from www. undp.org.lr

United Nations Development Programme and Government of Liberia. (2009). Capacity needs assessment in disaster risk reduction, county, districts and community assessment. Retrieved from www.undp.org.lr

United Nations Development Programme & Environmental Protection of Liberia. (2006). *First state of the environment report for Liberia*. Monrovia, Liberia

United Nations Educational Scientific and Cultural Organization. (2011). *World data on education*. Retrieved from http://www.undp.org.lr

United Nations Environmental Programme. (2006). Environmental considerations of human displacement in Liberia: A guide for decision-maker and practitioners. Retrieved from *www.unep.org*.

United Nations Environmental Programme. (2009). *First state of the environment report for Liberia*. Monrovia, Liberia.

United Nations Framework Conference on Climate Change. (2016). *The Paris agreement*. Retrieved from unfcc.int

United Nations International Children Educational Fund. (2011). Progress evaluation of the

unicef education in emergencies and post-crisis transition programme (eepct): Liberia Case Study. Retrieved from https://www.unicef.org/evaluation/files/Liberia-EEPCT_USA-2011-006-2.pdf

United Nations International Strategic Disaster Reduction. (2008). *World disaster reduction campaign hospitals safe from disasters: Reduce risk, protect health facilities, save lives.* Retrieved from http://www.eird.org/eng/revista/no-15-2008/art3.html

Van der Kraaij, F. (2015). Liberia: From the love of liberty to paradise lost. Leiden: African Center.

Vaughn, J. (2001). Environmental politics: Domestic and global dimension (3rd ed.). Boston, MA: Wadsworth.

Vordzorgbe, S. (2008). *Disaster risk reduction Sub-Saharan Africa region*. Retrieved from https://www.gfdrr.org.

Walch, C. (2013). Disaster risk reduction and local ownership. Retrieved from https://www.preventionweb.net/english/hy

Waugh, W. L. (1990). Terrorism and emergency management: Policy and administration. New York: M. Dekker.

Weitz, R. (2006). *FEMA, DHS and Katrina*: *Managing domestic catastrophe better* Retrieved from http://www.hudson.org/files/publications/FEMA)Wwitz_15fen06.pdf

Wodon, Q. (Ed.). Poverty and the policy response to the economic crisis in Liberia. Washington, D. C.: The World Bank.

World Bank. (2010). Knowledge, productivity and innovation in Nigeria: Creating a new economy. Washington, D. C. The World Bank.

Yin, K. (2016). Qualitative research from start to finish (2nd ed.). New York. NY: Guilford Press.

Appendix A; The list of key flood and related disaster events

No	Disaster Event	Year	Country	No. Killed	Cost $
1	Ebola Outbreak Epidemic	2014	Liberia	About 5,000	Over billion
2	Ongoing flooding in communities	2013	Belimah & Jamaica Road communities, Liberia	Not known	In the million
3	Army worm infestation affected 45 villages (FAO, 2009)	2008	Bong County, Liberia	No known Death	Over hundred million
4	The burning of the Executive Mansion	2006	Liberia	No known death	In the million
5	Oil spill	2006	In the Borough of New Kru Town, Liberia	No known death	Still remains
6	Flooding at the Freeport of Monrovia, Jamaica Road, Belimah, Via Town, Clara Town, Waterside and many other	2005 to present	Monrovia, Montserrado County	N/A	N/A
7	14-year war	1989	Liberia	300,000	Billions
8	Camp No Way Incident	1980	Bomi County	300	Million
9	Lynch Street Flood, Monrovia, (MICAT, 2012)	1979	Monrovia	22,000	
10	The chemical pollution and contamination of the Farmington River and other tributaries	Present	Margibi County and Maryland County	Not quantifiable	N/A
11	The pollution and contamination of the St. Paul River	In the 1960s and the 1970s	Nimba County	Not quantifiable	N/A

Appendix B: Summary of the Research Participants' Demographics

Location	Code	No. of Participants
BC: Samuel Doe	BC-SD1-5	5
BC: Watusa Town	BC-WT6-10	5
BC: Stockton Creek	BC-SC11-16	5
BC: Samuel Doe	BC-FG16-20	5

Appendix C: Summary of Interview Proceedings

Respondents	Years of residency	Manner of interview	Location	Date of interview	Duration of Interview
BC-SD1	7	Face-to-face	BC-SD	5/5/17	39 minutes
BC-SD2	20	Face-to-face	BC-SD	5/5/17	40 minutes
BC-SD3	14	Face-to-face	BC-SD	5/5/17	37 minutes
BC-SD4	10	Face-to-face	BC-SD	5/5/17	35 minutes
BC-SD5	8	Face-to-face	BC-SD	5/5/17	33 minutes
BC-W6	7	Face-to-face	BC-WT	5/5/17	35 minutes
BC-WT7	5	Face-to-face	BC-WT	5/5/17	33 minutes
BC-WT8	10	Face-to-face	BC-WT	5/5/17	30 minutes
BC-WT9	9	Face-to-face	BC-WT	5/5/17	37 minutes

BC-WT10	10	Face-to-face	BC-WT	5/5/17	38 minutes
BC-SC11	15	Face-to-face	BC-SC	5/6/17	37 minutes
BC-SC12	13	Face-to-face	BC-SC	5/6/17	33 minutes
BC-SC13	10	Face-to-face	BC-SC	5/6/17	35 minutes
BC-SC14	11	Face-to-face	BC-SC	5/6/17	40 minutes
BC-SC15	16	Face-to-face	BC-SC	5/6/17	38 minutes
BC-FG16	7	Focus group	BC-FG	5/6/17	167 minutes
BC-FG17	10	Focus group	BC-FG	5/6/17	
BC-FG18	12	Focus group	BC-FG	5/6/17	
BC-FG19	13	Focus group	BC-FG	5/6/17	
BC-FG20	17	Focus group	BC-FG	5/6/17	

GA-NDMA21	7	Face-to-face	C-bypass	5/7/17	49 minutes
GA-MPW22	10	Face-to-face	Center street	5/7/17	45 minutes
GA-EPA23	13	Face-to-face	4th Street, Sinkor	5/7/17	63 minutes
NGO-LRC24	7	Face-to-face	Paynesville	5/7/17	45 minutes
NGO-AEW25	4	Face-to-face	Banjor	5/7/17	60 minutes

Appendix D: Summary of Research Participants' Responses

Respondents	**IG-1**	**IG-2**	**IG-3**	**IG-4**	**IG-5**	**IG-6**	**IG-7**	**IG-8**	**IG-9**	**IG-10**
BC-SD1	7	No	Yes	7	Flood	All	No	No	No	Yes
BC-SD2	20	Yes	Yes	10	Flood	All	No	Some	LRC	Yes
BC-SD3	14	No	Yes	10	Flood	All	No	Some	DMF	Yes

BC-SD4	10	No	Yes	8	Flood	All	No	Some	LRC	Yes
BC-SD5	8	No	Yes	8	Flood	All	No	No	No	Yes
BC-W6	7	No	Yes	8	Flood	All	No	No	No	Yes
BC-W7	5	No	Yes	9	Flood	All	No	No	No	Yes
BC-W8	10	No	Yes	9	Flood	All	No	Some	LRC	Yes
BC-W9	9	No	Yes	10	Flood	All	No	Some	LRC	Yes
BC-W10	9	No	Yes	10	Flood	All	No	Some		Yes
BC-SC11	15	No	Yes	10	Flood	All	No	Some	LRC	Yes
BC-SC12	13	No	Yes	9	Flood	All	No	Some		Yes
BC-SC13	10	No	Yes	10	Flood	All	No	Some		Yes
BC-SC14	11	No	Yes	10	Flood	All	No	Some		Yes

BC-SC15	16	No	Yes	10	Flood	All	No	Some	LRC	Yes
BC-FG16	7	No	Yes	9	Flood	All	No	No	No	Yes
BC-FG17	10	No	Yes	10	Flood	All	No	Some		Yes
BC-FG18	12	No	Yes	8	Flood	All	No	Some		Yes
BC-FG19	13	No	Yes	9	Flood	All	No	Some	LRC	Yes
BC-FG20	17	No	Yes	11	Flood	All	No	Some	LRC	Yes
GA-NDMA21	n/a	n/a	Yes	9	Flood	All	No	n/a		Yes
GA-MPW22	n/a	n/a	Yes	10	Flood	n/a	No	n/a		n/a
GA-EPA23	n/a	n/a	Yes	9	Flood	n/a	No	n/a		n/a
NGO-LRC24	n/a	n/a	Yes	10	Flood	n/a	No	Yes		n/a
NGO-AEW25	n/a	n/a	Yes	10	Flood	All	No	No		n/a

Note: GM-NDMA: Government Ministry – National Disaster Management Agency – participant 21; GM - MPW– Ministry of Public Works – participant 22; GA –EPA-L; Environmental Protection Agency – participant 23; NGO-LRC: Non-governmental organization – Liberia Red Cross—participant 24; NGO-AEW: Africa Environmental Watch—participant 25

Appendix E: The Interview Guide

For Individual Research Participants and the Focus Group

1. How old are you?
2. How long have you lived in this community?
3. How would you describe yourself:

   (a) Just an ordinary resident in the community, or

   (b) One of leadership in the community
4. Do you remember any year (s) it rained very, very heavily in this community, and how many years has this situation continued in your community?
5. What happened when it rained very heavily in those years, and how was your livelihood during these times, including your children's school and providing food for them?
6. Has the government always done enough to address your concerns during and after flooding?
7. Do other organizations help you during and after flooding, and what organizations, apart from government, have been helpful?
8. Do you know anyone else in the community that experienced the situation that I could talk with?

Thanks you!

For Government and NGOs

1. How long have you worked with the entity?
2. What is your title, if I may ask?
3. Are you aware of the flooding in the Bilimah Community?
4. If so, to what extent has the frequency and intensity of flooding?
5. Has your entity been involved in any effort of disaster prevention, response and recovery in the Bilimah Community?
6. If so, to what extent?
7. Does the GoL have institution that manages disaster (only for gov't entities)?
8. How is your entity involved in disaster management, particularly flood in the community?
9. Is there any partnership in disaster management exercise that has been carried out in the community that you know off?
10. From your assessment, has the flooding situation in the Bilimah Community been receiving adequate management?
11. What do you think needs to happen to address the situation?
12. Is there anything you would like to add that I may have forgotten to ask you?

Thanks!

Appendix F: Informed Consent

You are invited to take part in a research study about "Exploring the Effectiveness of Disaster Management Protocols in Liberia" with focus on flooding disaster in Bilimah Community that has impacted the residents for the past ten years and still on going. The researcher is inviting residents who have lived five (5) years or above in the Bilimah Community to participate in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part. This study is being conducted by a researcher named Morris T. Koffa, Sr., who is a doctoral student at Walden University.

Background Information:

The purpose of this study is to explore and understand perceptions of residents in the Bilimah Community in Liberia, with regard to the effectiveness of strategies reportedly initiated by GoL for flood disaster management. Understanding these perceptions may lead to the improvement of lives through the appropriate public policy initiatives for positive social change.

Procedures:

The researcher will not use participants' personal information for any purpose outside of this research project. To ensure the safety and confidentiality of participants, only the researcher will apply codes to guarantee the participants' protection. Collected data will be stored on a password-protected computer stored in researcher's office and accessible only to me, the researcher. Also, data will be kept for a period of five years, as required by the University.

If you agree to take part in this study, you will be asked to:

- Allot about 45 minutes of your time; the interviews will audio recorded, and other and other non-electronic methods of communication will be use in order protect the product the interview.
- There will be members checking to verify and confirm the interpretation represents what you meant to say. This will take about 5 minutes.

Voluntary Nature of the Study:

This study is voluntary. You are free to accept or turn down the invitation. As the researcher, neither I nor the Bilimah Community will treat you in a bad way if you decide not to take part in the study. If you decide to be in the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of minor discomforts, somehow like what anyone can experience in daily life. This may include shyness, being a little vex, or tired after a while. But it will not be too more headache than what you and I can handle.

Benefits

This study will be able to benefit everybody this:

- Give the community more strength to have the relevant knowledge to cope with future flooding

- Help the community to minimize the potential impact of flooding.
- Help to encourage institutions and to help the building of support systems for potential flood victims
- Create positive social change for establishing a sustainable pool of strategies to help manage flood disasters.

Payment:

There will no monetary or in kind reward regard to any participant taking part in the research.

Privacy:

As the researcher, I will not use your personal information for any purpose outside of this research project. Details that might identify participants, such as the location of the study, also will not be shared. I will secure all the data secure.

For security measures, I will store the data through various security measures, including electronic means with password protection accessible only to me, and use alpha-numeric coding, all stored in cabinet file with combination lock. Finally, I will keep the data for a period of five years as required by the university.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact me, the researcher, via 240472545/3014641664 or email koffamkoffa@aol.com.

If you want to talk privately about your rights as a participant, you can call the Research

Participant Advocate at my university at 612-312-1210. Because participants will be outside the US, you will need to dial instructions for reaching the ethics office.

Please keep all communication during the interview confidential.

Obtaining Your Consent

If you feel you understand the aims and procedures of the study well enough to take part, please sign here below:

Printed Name of Participant

Participant's Signature _____

Researcher's Signature _____

Date of Signature _____

Appendix A: Title of Appendix

Insert appendix here. Appendices are ordered with letters rather than numbers. If there is but one appendix, label it Appendix, followed by the title, with no letter designation.

The appendices must adhere to the same margin specifications as the body of the dissertation. Photocopied or previously printed material may have to be shifted on the page or reduced in size to fit within the area bounded by the margins.

If the only thing in an appendix is a table, the table title serves as the title of the appendix; no label is needed for the table itself. If you have text in addition to a table or tables in an appendix, label the table with the letter of the appendix (e.g., Table A1, Table A2, Table B1, and so on). These tables would be listed in the List of Tables at the end of the Table of Contents.

If you include in an appendix any pre published materials that are not in the public domain, you must also include permission to do so.