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AN ANALYSIS OF POLICY IMPLEMETNATION ON NATURAL DISASTERS IN SIERRA LEONE: A CASE OF 2017 REGENT MUDSLIDE

BY

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Abstract

On 14th August 2017, a mudslide occurred in Sugar Loaf area, causing a huge humanitarian crisis. Over two thousand people were displaced and lost their livelihoods, property, social and infrastructural facilities. The mudslide also affected 116,766 m^2 (1,256,858 ft^2) surface area and more 1,000 people died. While analysts say the 2017 mudslide disaster was man made, issues of over population and overdependence on the environment still exist and were said to be a recipe for disaster. As such, the study sought to investigate the response of the Government of Sierra Leone, in terms of policy implementation in response to the disaster and as part of the national disaster management and prevention strategy. The study also examined government response successes and challenges of the intervention initiatives with a view of assessing the feasibility of government's adoption of information technology communication in detecting future disasters. The study used the qualitative research design and approaches to data collection. These included in-depth interviews, observation, focus group discussions and document analysis. Triangulation of these approaches was used to gain an in-depth understanding of the responses of the Government of Sierra Leone in the aftermath of the 2017 Mudslide disaster. The qualitative design was adopted because it is essentially subjective in character and seeks to understand human behavior and the reasons that govern the type of behavior. This approach provided insight into government's response behavior and people's perceptions towards the government's response initiatives. The sample comprised 26 families drawn from the 52 displaced families residing in Mile 6 Camp, and 6 key actors involved in environmental disaster management. Other key informants were from the Red Cross, the Office of National Security, the United Methodist Church, and survivors of the 2017 disaster. Findings revealed that the Sierra Leonean government had done a great job in terms of disaster management as compared to previous years. The 2017 mudslide and the 2019 August flooding had to an extent raised some level of awareness among the Sierra Leonean citizens. However, the findings also revealed that there was a lot of work to be done by the Sierra Leonean government in managing natural disasters. This is because Sierra Leone was going to continue to be affected by natural disasters if the government was not going to put in place robust policy and operational natural disaster management systems. Study findings also showed that the country's disaster preparedness was affected by lack of resources or funds to manage disasters. The government relied heavily on international donor organizations who also had their own interests. The research therefore recommended a form of the "Ujamaa" programme/policy for equal opportunities and programmes in the provinces and rural areas, use of information technology such as geographical information sensors (GIS) to detect disasters.

Keywords: natural disasters, disaster response, disaster prevention, mudslide, Vulnerability.

Declaration Page

I declare that this dissertation is my original work except where sources have been cited and acknowledged. The work has never been submitted, nor will it ever be submitted to another university for the award of a degree.

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Dedication

This thesis is dedicated to God all mighty who has so graciously seen me through this academic journey. To all the victims who lost their lives and properties and to the 2017 mudslide, I am grateful that God kept you to be able to tell your stories. To my Mum, Mrs. Millicent Yambasu for your prayers and encouragement. To my dad, Mr John Yambasu for your financial support and love throughout this journey I say thank you. To My brother John Yambasu and Miss Amida Darbor for helping make this journey an easy one thanks. To Kwame Gerber for being a source of inspiration, to Emmanuel, Adima and Rebecca Yambasu for believing in me, thank you. To My supervisor, Dean, College of Business, Peace, Leadership and Governance Professor Machakanja thank you. To the United Methodist Church especially Mr. Phileas Jusu , Council of Churches Sierra Leone, Bishop Yambasu, Sierra Leone Metrological and Climate change Agency, Mr. Amara Kanu and to the Office of National Security, Director Puma, Director Rogers and director Sinneh and staff in the disaster Management department especially Mrs. Sabiatu Bakarr, Magarette Kamara and Mr. Major Prince Sesay and Abdul Raman Bangura, I am grateful for allowing me learn from you. To all other interviewees, friends and family thank you for being part of my journey.

List of Acronyms and Abbreviations

APC	All People's Congress
CCSL	Council of Churches Sierra Leone
DMD	Disaster Management Department
EPA	Environment Protection Authority
GoSL	Government of Sierra Leone
ID	Identification
IRC	Incidence Response Center
ICT	Information and Communication Technology
IPCC	Internal Panel Convention on Climate Change
IDP	Internally Displaced persons
MD	Managing Director
MET	Metrological Agency
NDC	National Determined Contribution
NGO	Non-Governmental Organization
ONS	Office of National Security
PBS	Provincial and Boarder Security
SDG'S	Sustainable Development Goals
UMC	United Methodist Church
UMCOR	United Methodist Committee on Relief
UNDP	United Nations Development Programme
UNOPS	United Nations Office for Project Services
WASH	Water, Sanitation and Hygiene

Definitions of key Terms

Natural disaster: A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources (UNISDR 2009).

Vulnerability: Vulnerability is defined as: "Conditions determined by physical, social, economic or environmental factors or processes that enhance a community's sensitivity to the consequences of hazards" (UN / Inter-agency Secretariat of the International Strategy for Disaster Reduction Geneva, 2004).

Natural Hazard: A natural hazard is a geographical, atmospheric, or hydrological phenomenon (earthquake, landslide, tsunami, sandstorm, storm surge, flood, drought, etc.) that may cause damage or loss.

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CHAPTER 1 INTRODUCTION

1.1 Introduction

A natural disaster involves the exposure of human populations and their infrastructures (the stake) to a catastrophic event of natural origin (the hazard). The main features are avalanches, forest fires, floods, landslides, cyclones, storms, earthquakes, and volcanic eruptions, but also tidal waves, pest invasions, prolonged droughts. Floods and storms remain the most frequent disasters in recent years. Indeed, they account for more than 60% of natural disasters in the world (Emergency Events Database, 2008). There has been an increase in the number of events and people affected by disasters in recent decades. This last evolution could be crossed with the world population and urbanization galloping and the significant increase in temperatures since 1980.

In 2017, the Centre for Research on Epidemiology Disasters reported 335 natural disasters (92 in America, 39 in Europe, 42 in Africa, 136 in Asia and 8 in Oceania) which affected over 95.6 million people, killing an additional 9,697 and costing a total of US $335 billion. Despite this, the Americas reported the highest economic losses, representing 88% of the total cost from 93 disasters. China, United States of America, and India were the hardest hit countries in terms of occurrence with 25, 20, and 15 events respectively (Centre for Research on the Epidemiology of Disasters, 2018). Recently in March 2019, the Mozambican President, Philipe Nyusi said more than 100,000 people were at risk and more than 1,000 people were feared killed by the cyclone Idai.

The economic cost of natural disasters is increasing, marked by major disasters in developed countries where the multiplication of infrastructure and equipment greatly increases the damage caused. The following shows in particular the economic impact: the Kobe earthquake (Japan) in 1995: 100 billion dollars in damage; Hurricane Katrina (USA) in 2005: 125 billion dollars in damage; the Sichuan earthquake (China) in 2008: 85 billion dollars of damage; the tsunami of Honshu (Japan) in 2011: 210 billion damage. On average, from 2000 to 2016, natural disasters in the world cost more than $ 113 billion (Magdalaine, 2017).

In developing countries however, in the occurrence of major catastrophe, the loss of lives far outweighs the economic cost due to the lack of resources, both human and financial, to respond to such disaster. The capacities of most states are left overwhelmed and will have to rely on international assistance to save lives and dignity of affected communities. In 2017 for instance, deaths caused by natural disasters in Sierra Leone accounted for 0.35% of the total deaths whereas deaths caused by natural disasters in the United States was less than 0.1% .The highest number of deaths due to natural disaster the United States has recorded over the past two decades was 0.11% in 2005 as a result of hurricane Katrina. It is therefore important that developing countries such as Sierra Leone, develop and implement policies and strategies to prevent or mitigate and respond to natural disaster to reduce casualties and economic cost.

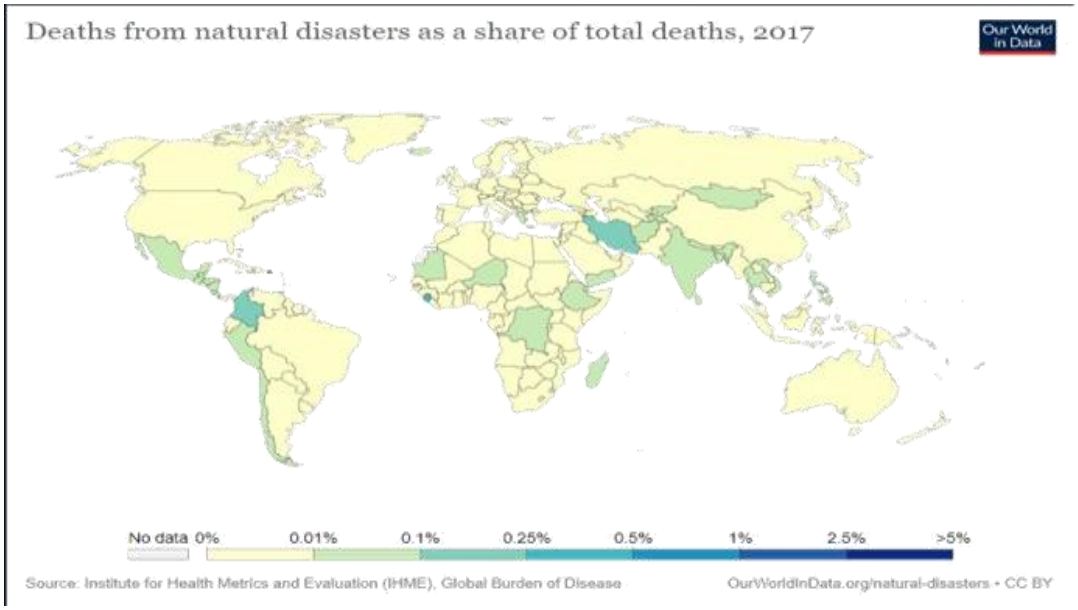


Figure 1: Deaths from natural disasters as a share of total deaths 2017
Source (Institute for Health Metrics and Evaluation (IHME). Global Burden of Disease)

1.2 Background to the Study

After years of a civil war, Sierra Leone has experienced a significant improvement in its socio-economic indicators since the end of the war, rising 10 places from the unenviable position it occupied a few years ago in the human development index. Despite these achievements, there are still significant challenges in socio-economic development, characterized by the fact that it continues to be a fragile state. The results of the 2011 Integrated Household Survey in Sierra Leone (SLIHS) show a decrease in poverty rates from 66% in 2003 to 52.9% in 2011, with a sharper decline in urban areas compared to rural areas.

This reduction in poverty was attributable to an annualized increase of 1.6% in real per capita household spending between 2003 and 2011. Urban poverty declined from 46.9% in 2003 to 31.2% in 2011. poverty analysis at the district level revealed that by 2011, most

districts converged on poverty levels of between 50 and 60 percent, except for Freetown (20.7 percent) and 64 percent of households in the top two quintiles were in the urban areas of the West.

Sierra Leone has serious environmental problems. The 2010 Environmental Performance Index puts Sierra Leone at the bottom of the table (163 out of 163 countries) and the country has recorded significant regressions since the end of the civil war. It is therefore essential to ensure more sustainable management of natural resources in Sierra Leone, both environmentally and economically, as key development sectors (mining and agriculture) depend on good management of natural resources. Sierra Leone's environmental problems will be exacerbated by the effects of climate change. Recent projections indicate that the average annual temperature could increase from 1.0 to 2.6 ° C by the 2060s. Given its low level of development and limited capacity to deal with extreme events, the country is considered highly vulnerable to the adverse effects of climate variability.

1.2.1 Government Development Strategy

The Government's medium-term development plan documents some of the environmental problems. The Agenda for Prosperity 2013-2018 (A4P) builds on the achievements of the Agenda for Change (AFC), its goal is to reduce poverty by promoting sustainable and inclusive green growth to achieve middle-income status (MIC) by 2035. This ambitious long-term vision requires the achievement of sustained economic growth of 7% on average per year and a structural transformation of the country out of its dependence on

primary products and turn it into a value-added economy (in the agricultural sector and mining) whose structure is diversified and stable. It also requires Sierra Leone to consolidate its peacebuilding and state building achievements and judiciously manage its transition to building a resilient and stable country.

The A4P has eight complementary pillars encompassing 33 sectors and strategic themes, key results and targets, and priority interventions. All these elements are intended to translate into reality the aspirations and priorities that have emerged from extensive multi-stakeholder consultations in all regions of the country. These pillars are: 1) diversification of the economy; 2) the management of natural resources; 3) human development; 4) international competitiveness; 5) employment and manpower; 6) social protection; 7) governance and public sector capacity and 8) gender and women's empowerment (African development bank group, 2013).

1.2.2 Strengths and opportunities

i. Peaceful and stable political and economic environment

Sierra Leone has made significant progress in consolidating peace and strengthening security throughout the country. This positive trend, coupled with good management, has enabled the country to achieve a sustained and robust level of macroeconomic performance, thus creating a solid foundation for resilience as it gradually moves out of a fragile situation.

ii. Rich endowment of natural resources

Sierra Leone is well endowed with renewable and non-renewable resources. These include: (i) for renewable resources: marine resources, forestry, fertile land resources and water; and (ii) for non-renewable resources: rutile, diamond, bauxite, iron ore, gold and potential reserves of oil and gas. Sustainable and transparent management of these resources will not only generate significant revenues for the country but could also stimulate a rapid expansion into a diversified economy that can provide more jobs, especially for young people. This is origin of the fragility of the country and the maintenance of inclusive green growth during the implementation period of the A4P and beyond.

1.2.3 The August 2017 mudslide case in Sierra Leone

On the night of Sunday 13 to Monday 14 August 2017 after 3 days of torrential rains, torrents of mud invaded the streets of Freetown, the capital of Sierra Leone. Subsequently, there were hillsides which collapsed many homes and displaced a lot of people in the capital city. The Regent neighborhood was the most affected. Sierra Leone, a small English-speaking country in West Africa, is one of the poorest countries in the world (World Bank, 2017).

Wedged between the sea and a mountain, the country has the highest annual rainfall rate in Africa (FAO, 2011). It has a little more than 7 million inhabitants of which a little more than 1 million live in Freetown. Urbanization galloping for more than 20 years nibbling every year a little higher the heights of the capital and the risks from deforestation and

climate change have only increased the number of casualties (United National Office for the Coordination of Humanitarian Affairs, 2017).

In the wake of the disaster, it was apparent that neither the people of Greater Freetown, nor the Government or development partners were adequately prepared for a disaster of such magnitude. In this context, where a relatively limited number of people living within the affected areas are connected to the urban water system, one may think that damage to the urban water system might not be detrimental to most of the population, alas, even unconnected households can be affected, especially during flooding disasters. During the said disaster, inhabitants that were connected to the urban water system and those that were not, were affected in various ways.

Moreover, those that were not connected to the urban water supply system were somehow affected by flooding and the supply to those that are connected within the locality and beyond were immediately cut-off by the utility due to technical difficulties at the treatment plant and distribution system. In the wake of the disaster, several humanitarian and related institutions (Local and International), led by the Office of National Security (ONS) rushed to the affected area to save lives, evacuated survivors to safety and provided immediate essential services such as food, water and sanitation to the affected communities.

The Sierra Leone Ministry of Health organized two camps in the city to accommodate refugees. The 1st (Old School) which housed the survivors of the mudslide is in a former discotheque and hosts 300 people. The 2nd (Juba) in a military barracks housed 340

people (number that will increase each day). Sierra Leone, having already had to fight this epidemic, will be very organized in terms of camp maintenance and the management of the spread of diseases (number of water points for washing hands, camps with latrines and showers very often cleaned (OCHA, 2017).

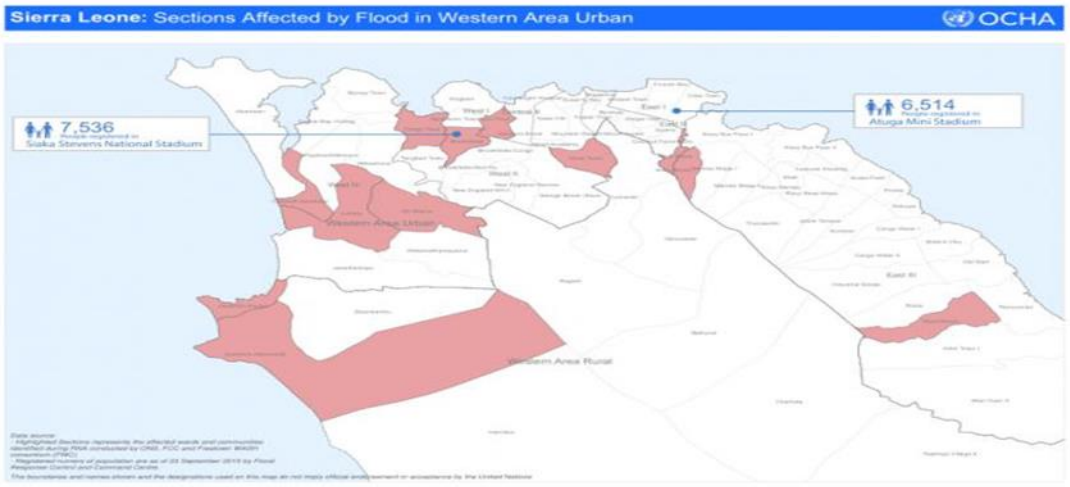


Figure 2: Section of the affected area in Western Urban Freetown

Source: 0CHA (2018)

1.3 Statement of the problem

On 14th August 2017, a mudslide occurred in Sugar Loaf area, a forested mountain in Western Sierra Leone, causing a huge humanitarian crisis (Gallo, 2018). In Bo District, 2,630 were directly affected. A total of 339 houses were destroyed. Pujehun district has 272 persons affected by floods with 41 household heads affected losing 16 houses (OCHA, 2017). Because of the huge impact of this landslide, 3000 people were displaced and lost their livelihoods, property, social and infrastructural facilities. The mudslide also

affected 116,766 m^2 (1,256,858 ft^2) surface area and more 1,000 people died (Disaster Management Center, 2018).

While analysts say the 2017 mudslide disaster was man made, issues of the populace overdependence on the environment still exist and are said to be a recipe for disaster. Negative activities like deforestation, stone mining in protected areas, and destruction of water catchment, land grabbing and bad construction of infrastructures in prohibited locations coupled with poor enforcement of government policy by institutions have contributed to the frequency and severity of disasters. The habitation of some proportion of sierra Leoneans in slums especially around the coastal strips is a serious cause for concern.

Reports also highlight that, little seems to have been done two years after the disaster in relation to institutions and mechanisms for disaster prevention and mitigation. Calls to stop the extension of settlements into the peninsula's hills and for better management of the city's development are often ignored by the Government. At household level, the populace rarely takes environmental measures before or after disasters occur. With the above stated shortcomings, it is timely to address the issues of post disaster management including resettlement and rehabilitation.

1.4 Research objectives

The objectives that guided this study were to:

1. Examine the policies used by the Sierra Leonean government to respond to natural disasters,
2. Assess the response of the Government of Sierra Leone after the 2017 mudslide,
3. Analyze the success and challenges faced by the government of SL in responding to the disaster; and
4. Suggest ways to establish effective response mechanisms to disasters in Sierra Leone.

1.5 Research Questions

The study was guided by the following research questions:

1. Does the Sierra Leonean government have policies on disaster response and to what extent are they effective?
2. How did the Government of Sierra Leone respond to the 2017 mudslide disaster?
3. What challenges did the Sierra Leonean government face in responding to the 2017 natural disaster?
4. What possible intervention mechanisms can be put in place to strengthen the existing policies with a view to mitigate the effects of natural disasters in Sierra Leone?

1.6 Assumptions

The following are assumptions which guided the study:

1.6.1 That the Sierra Leonean government did not have policies on disaster response until after the 2017 mudslide.

1.6.2 That the Sierra Leonean government faced challenges in responding to the 2017 mudslide disaster because of lack of an effective policy and operational mechanisms.

1.6.3 Information technology communication can boost the capacity and level of coordination among main actors in disaster response.

1.7 Purpose of the study

The purpose of the study is to investigate the GoSL response to the 2017 disaster. Assess the capacity and level of coordination among main actors in the field of disaster mitigation and how effective were the mechanisms used.

1.8 Significance of the study

As a young researcher, it helped me gain in-depth knowledge and understandings about natural disasters and their impact on society. Secondly, the study provides useful insight that inform the GoSL on the use of modern technology to respond to natural disasters and to revise its disaster management policies and structures in line with modern technology. The study also raises awareness on society on the impact of natural disasters on their lives, infrastructure, and the environment. The findings from this research improves on the existing policies on the management of mountainous areas, reduce on their occurrence to minimize losses from these disasters.

1.9 Delimitations of the Study

Even though man-made and natural disasters have occurred in various places at any given time in Sierra Leone, the study focused on the Regent area. This is since the 2017 mudslide occurred in this area and the results of the investigation can give a general picture on disaster management and response in Sierra Leone (Daki, 2010). The study also focused exclusively on the response of the GoSL in term of policies, programs and structures which aim to mitigate and prevent future disasters. What are the actors and the level of coordination, the success stories, and failures with past initiatives? Other aspects of interest like the roots causes of the disaster, the psychological, physical, and economic impact of the disaster on the population, and exploration of the incidence itself were ignored.

1.10 Limitation of the Study

The physical distance separating the targeted individuals, institutions, and organizations was prohibitive for the researcher to physically visit for data collection. In other instances, the individuals targeted for the interviews were not in the office at the time of the appointment, therefore the researcher had to postpone the interview until an unknown date. This disturbed the work plan and the smoothness of data collection process. Some participants neglected to fill in the semi questionnaires for many reasons: their unfamiliarity with the study, unwillingness, and political issues. Some others were pessimistically or suspicious to be involved in such a study. The researcher also faced challenges including finances as this process require funds to carry out some of the

activities, such as printing of questionnaires, fuel for trips to and from the research sites, food, and accommodation.

CHAPTER 2 REVIEW OF RELATED LITERATURE

2.1 Introduction

Climate change is changing the usual pattern of precipitation and increasing the probabilities of occurrence and intensity of certain phenomena, including floods (Water Expert Centre, 2015). These mutation rainfalls will be consequential for many regions of the globe, and Sierra Leone will probably be no exception. The potential impact of flood on the health of victims are numerous on people's physical body (Murray & Baker, 2014) and mentally (Joseph & Proverbs, 2015). Most deaths, injuries caused by floods can be avoided by the application of preventive measures using modern technology.

Preparing vulnerable populations to face natural disasters by designing relevant and accessible management plans while encouraging them to adopt certain protective measures can indeed help to mitigate physical damage, social and emotional problems that may occur during a mudslide (Al-Rousan, 2014). The study by Kent (2013) has shown that the adoption of protective behaviour by residents of a flood zone proved to be effective not only to decrease the negative impacts on their physical health, but also to increase their ability to overcome the trauma flood.

2.1.1 Legal framework and policies

Sierra Leone has signed and ratified several international instruments and conventions relating to climate change and disaster management. These include: The United Nations Framework Convention on Climate Change (UNFCCC), 1992, Ratified, on 22 June 1995 the Kyoto Protocol signed on 11 February 1993 and ratified on 7 June 2005; the

Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD), signed on the 11 November 1994 and ratified on 25 September 1997; and the Hyogo Framework for Action 2005 – 2015: Building the Resilience of Nations and Communities to Disasters, of which the current draft for Sierra Leone Disaster Management Policy is based.

2.1.2 ECOWAS Disaster Risk Reduction Policy of 2006

The ECOWAS Risk Policy, like the Hyogo Framework which resulted from the gaps and lapses of the 1994 Yokohama Strategy are both non-legal binding instrument and therefore lacks an enforcement mechanism. This has left most State parties that are signatories to these instruments tardy in their implementations. The current draft of the Disaster Management Policy of Sierra Leone for instance, inspired by the Hyogo Framework, was drafted in 2006, a year after the Hyogo Framework was developed but has still not yet been passed in parliament.

Locally, the Disaster Management Department (DMD), within the Office of National Security (ONS), is responsible for handling all-natural disasters within Sierra Leone. The ONS was created by an act of parliament, the National Security and Central Intelligence Act 2002, and one of its functions is to serve as the government's primary coordinator for the management of national emergencies such as disasters, natural or artificial. The DMD was solely created to serve this function. The DMD however lacks the necessary resources and structure to carry out its function. In the justification of the need of a disaster management policy which would guide and direct the activities of the DMD, poor integration of civil societies into effective disaster management, "the lack of

comprehensive Disaster Management Strategy, lack of coordinated and clear lines of roles and responsibilities, poor capacity on the part of national and local government to timely respond to disasters" (Government of Sierra Leone, 2006 p.55). The document however failed to provide such clarity in terms of roles and responsibilities as the term "the government" is ambiguously used throughout the document.

It highlights the integration of disaster risk management into sustainable development programmes and policies, capacitating disaster response institutions, the utilization of knowledge, education, training and innovation to build safe resilient societies, monitoring and early warning and improving response effect through preparedness as its objectives. The draft policy addresses disaster in three phases: the pre-disaster phase, the disaster phase, and the post-disaster phase. With each phase, the Government through ONS is to provide coordination and direction whiles the implementing agency takes lead. Though quite comprehensive, the vagueness of the policy still leaves a lot of issues unaddressed, such clarity in terms of roles and responsibilities, as stated earlier, identifying types of disasters and first responders and training of first responders in terms of skills and not just knowledge.

2.2 Theoretical framework

2.2.1 The theory of planned behaviour and disaster preparedness

Natural disasters, such as that of the August 2017 mudslide in Sierra Leone, and Ebola outbreak that hit the Western Africa Community had the entire world on edge and devastated the heart of many. With all the statistics and recommendations related to

emergency and disaster preparedness, there is still the unfortunate and common mentality of “it won’t or can’t happen to me” that seems to plague our communities in Africa and the world at large. Disbelief in emergency preparedness has led many families and communities to unnecessary grief, sadness, tragedy, and even loss.

Factors affecting preparedness include critical awareness, risk perception, preparedness perception, self-efficacy, collective efficacy, locus of control, fatalism, anxiety, previous disaster experience, societal norms, sense of community, community participation and empowerment, optimistic and normalization biases (Spittal & Walkey, 2005), social trust, perceived responsibility, responsibility towards others, coping style and available resources (Floyd & Rogers, 2000). Several theoretical frameworks can be employed in attempts to deal with behaviours that reduce the risk of natural disasters including Protection Motivation Theory, Person Relative to Event Theory, Protective Action Decision Model, Social-Cognitive Preparation Model; but to achieve its ends, this study will adopt the Theory of Planned Behaviour and disaster preparedness, developed by Ajzen (Ajzen, 1991).

As Ajzen suggested, to increase the chances of achieving results that are both significant and relevant, it is preferable that such an inquiry be itself preceded by a study pilot specifically aimed at identifying dominant or cardinal beliefs that underlie people's perceptions of the behaviour of interest (Ajzen, 2015). This theory of planned behaviour postulated the existence of three predictor variables of the intention behaviour and the behaviour itself, namely: (a) attitude towards the targeted behaviour, (b) perceived social

pressure for behaviour and (c) the perception or feeling of control over the behaviour in question.

The utility of this explanatory model for predicting behaviours in various contexts has been demonstrated many times (Ajzen, 2011), the author of a review of writings even goes so far as to emphasize that it was, to this day, a psychosocial model that had been helpful in understanding pro-environmental behaviours (Gifford, 2014), including those associated with individual adaptation to change climatic conditions (Gifford, 2011).

By its nature, however, this theory cannot provide any specific indication as to the kind of potentially effective educational intervention to change behaviour. The authors nevertheless agree to consider this theory as effective to identify the key factors likely to intervene in a change of behaviour (Chan & Hagger, 2012, de Leeuw, Valois, Morin, & Schmidt, 2014). In this sense, this theory can help to determine the general guidelines on which an educational intervention some chance of being effective.

2.2.2 Underlying concepts

To explain the formation of attitudes, the perception of social norms and feeling of control makes use of specific beliefs associated with each of these three components, namely: beliefs that are precursors of attitude to behaviour, normative beliefs that determine perceived or perceived social pressure, and beliefs related to the feeling of control that underlie the perception or feeling of control over the behaviour in question.

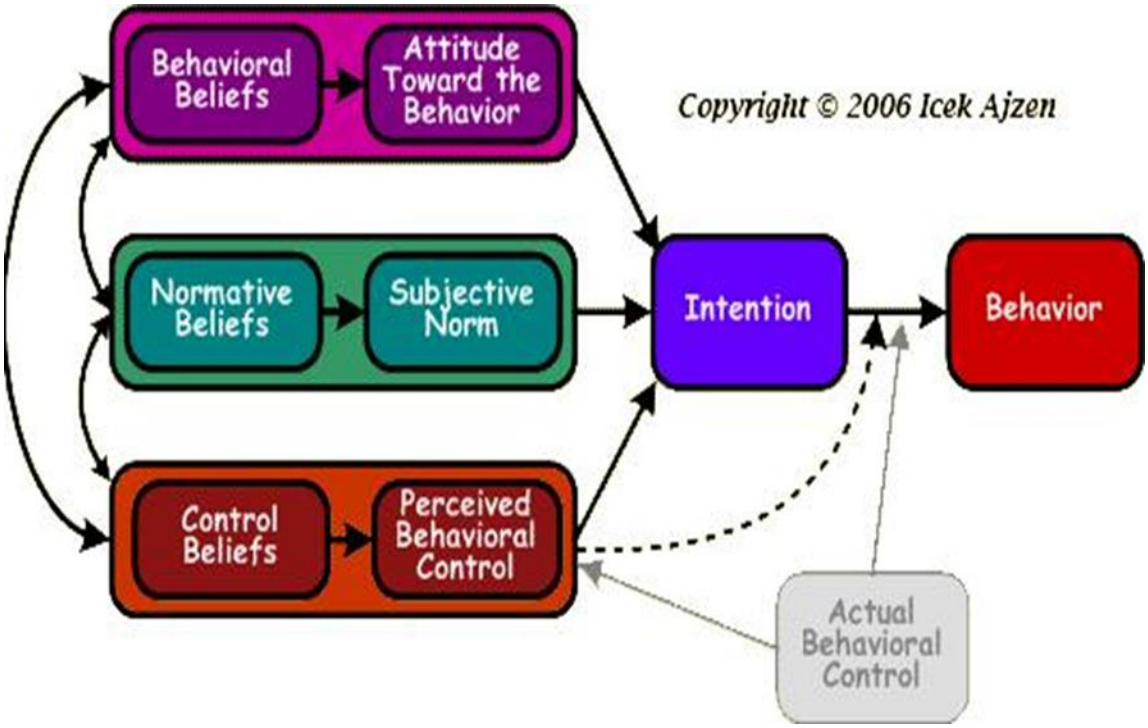


Figure 3: Theory of Planned Behaviour (Ajzen & Cote, 2008).

Faced with the possibility of adopting a behaviour, a person would assess its possible consequences and their respective probabilities of occurrence. In general, people develop favourable attitudes towards specific behaviours that they consider effective to achieve a desired result. Conversely, people have an attitude rather unfavourable if we consider that a behaviour is likely to lead to a result not in accordance with our objective, or that it is unlikely to allow us to reach this one. For example, the case of flood adaptation and importance for people living in the flood zone to be aware of the challenges of this phenomenon. One of the issues is the potential impact of floods on health including depression and gastrointestinal disease (Alderman, 2012).

A person living in a flood zone could have a negative attitude with respect to flood adaptation behaviour such as water-proofing foundations, on the pretext of its uselessness because it has never personally experienced the positive effects of this type of hardware support. For their part, the so-called normative beliefs influence the formation of the perception of social norms (Fishbein & Ajzen, 2010). Before adopting a behaviour, an individual seeks to assess to what extent the members of his entourage approve or disapprove of the adoption of this behaviour, the entourage referring here as much to a person as to a group of people or even to one or more institutions.

In this respect, the theory states that it is necessary at the same time to the level of sensitivity of the individual to the opinion of others, his motivation or propensity to conform to the expectations he perceives from the surrounding injunctive. If we apply this fact to the case we are interested in, we can for example imagine that a person living in a flood zone will have a stronger intention to adopt preventive flood adaptation behaviours if he believes that his municipality really attaches great importance to this issue. But, for this perception to have any influence on his intention to behave, it is still necessary that this person has a positive perception of his municipality.

A person living in a flood zone will have a greater intention to adopt preventive behaviours of adaptation to flood if she believes that people in the neighbourhood attach great importance to these adaptation behaviours and implement the recommendations of the municipality in adaptation. It may be more inclined to adopt them in turn and to act in accordance with the norms of one's environment. Finally, beliefs associated with the

feeling of control influence perception that the individual has of his level of control over the behaviour itself (Fishbein & Ajzen, 2010).

These beliefs result from the assessment of factors likely to facilitate, to make more complex or even to inhibit the execution of the behaviour. It may be personal or individual factors (level of knowledge, physical abilities, and level of autonomy) or external factors (such as lack of time or material resources). The theory invites consideration of the relative importance of each of these determinants (attitudes, perception of social norms and feeling of control), with individuals not all ascribing the same weight.

In general, an individual feel less able to adopt to a behaviour that he perceives the weight of factors hindering its chances of success. His evaluation may be based on his direct experience of the behaviour in question, but it may also result from less direct information, such as the experience of some of his relatives. With reference to the case of floods, people living a Freetown, Regent area already know, at least in general terms, that these can constitute a threat to their health. It is important for them to be aware of this and be willing to adopt preventive adaptation behaviours. However, if they do not feel they have the knowledge to adapt effective, they are unlikely to act in this way.

2.3 Sierra Leone and Disasters

Sierra Leone is exposed to a range of natural and man-made hazards. The exposure of dispersed populations in Sierra Leone to recurrent or persistent localized hazard conditions of low to moderate intensity, has the potential, in time, to lead to debilitating

cumulative disaster impacts. Such conditions have been particularly evident in urban and rural settings being exposed to recurring localized floods, landslides storms or drought (Sierra Leone Hazard profile 2004).

Sierra Leone's vulnerability is the result of climate and geography specificities, as well as high poverty rates combined with insufficient land use planning and environmental management systems. Furthermore, as a result of excessively high levels of internal migration throughout the ten years of civil war, Sierra Leone's population is currently about 40% urban, of which the majority live in legally prohibited settlements (classified as slums), which are increasingly exposed to harmful hazards.

2.4 National Disaster Risk Management

The importance of a National Disaster Risk Management (NDRM) for Sierra Leone cannot be overemphasized. Disasters affect poor and vulnerable people the most and can be a significant impediment to poverty reduction and sustainable development. Rapid population growth and unplanned urbanization force poorer communities to live in high-risk settlements, often in fragile and hazardous conditions that increase their vulnerability to disasters (Mandira and Sushil, 2006). The GoSL is dedicated to using a multi-sectoral and multidisciplinary approach to tackle the causes and effects of disasters.

2.5 Training and Awareness in Disaster Prevention

Sierra Leone is developing proposals for improving training for disaster management at the community level. It will integrate prevention into these proposals and will provide

specific prevention courses in the program Community Civil Protection. Similarly, public awareness can contribute to disaster prevention - for example, citizens should know what to do in the event of an earthquake. The Country will benefit from the next calls for proposals in the context of civil protection to provide for the possibility of financing public awareness and education, such as the census of the best practices and the preparation of school programs.

2.5.1 Improve the effectiveness of existing instruments about prevention Disasters

Several Community financial and legislative instruments support the action in the field of prevention. The country should ensure that prevention is more systematically and effectively addressed in various programs and policies (for example, Community policies on agriculture and rural development).

2.6 Multi-sectoral Approach towards National Emergencies and Disaster Management

These short-term approaches to disaster management had been the cause of recurrent preventative catastrophes, public health challenges and rapid environmental degradation experienced in Ghana (Gaillard, Pangilina, Cadag, & LeMasson, 2008). We are advocating for a multi-sectoral approach to emergency and disaster management in Ghana by all sectors and partners involved to ensure adequate prediction, regulation, prevention, and lessons for mitigation and monitoring, information, and education to the public.

2.7 Land-use planning and mitigation

The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses. Land-use planning is an important contributor to sustainable development. It involves studies and mapping; analysis of economic, environmental and hazard data; formulation of alternative land-use decisions; and design of long-range plans for different geographical and administrative scales (Barry, 2006). Land-use planning can help to mitigate disasters and reduce risks by discouraging settlements and construction of key installations in hazard-prone areas, including consideration of service routes for transport, power, water, sewage, and other critical facilities.

The lessening or limitation of the adverse impacts of hazards and related disasters. The adverse impacts of hazards often cannot be prevented fully, but their scale or severity can be substantially lessened by various strategies and actions. Mitigation measures encompass engineering techniques and hazard-resistant construction as well as improved environmental policies and public awareness. It should be noted that in climate change policy, “mitigation” is defined differently, being the term used for the reduction of greenhouse gas emissions that are the source of climate change.

2.8 Nexus between planet, people, and prosperity

A combination of natural, cultural, social, and political factors contributes to disasters. Over the last twenty years, over 1.35 million have died as a result of their vulnerability and exposure to natural hazards with women and girls bearing a heavy toll; and over four billion have been displaced and left homeless, injured or in need of emergency assistance (Centre for Research on Epidemiology of Disasters, 2015). Deaths due to disasters from weather- and climate-related events (floods, storms and heatwaves in particular) account for most disaster deaths in most years and there has been a sustained rise, more than doubling, over the past forty years. More than half of disaster mortality is caused by extreme geophysical disaster events, primarily earthquakes, including tsunamis, and volcanic eruptions.

2.9 The future of reduction disaster risk

There is growing momentum within the private sector, citizens, and municipalities to transforming development practices in sectors such as renewable energy, water and waste management, natural resources management, construction ecological and infrastructure, as well as sustainable agriculture. These transformations of development practices can also help reduce disaster risk. For example, the transition to a low carbon emission economy reduces the risk of catastrophic climate change, the protection and rehabilitation of ecosystems which play a regulatory role may limit many hazards and a reasoned.

2.10 Space Information Systems

The applications of space-based ICTs play a very specific role in disaster management as they provide information, services, and tools to support decision-making (Earth Observation Group, 2004). Space techniques are particularly useful for collecting continuous information over large areas geographically, and to provide information services to remote and poorly served. The rapid development of space ICTs, as well as the integration of remote sensing, geographic information systems (GIS) and satellite positioning (collectively known as "3S technology"), have created solid foundation for effective monitoring of natural disasters as well as good management of information and knowledge about them.

GIS technology, for example, which uses spatial data, makes it possible to combine on a map different types of georeferenced data. It can give information on the transport axes, the power lines, the areas to be risk, seismic lines and the location of services and infrastructures emergency (The Beijing Action for Disaster Risk Reduction, 2018). The GIS for risk management.

2.11 Satellite positioning systems (SPS)

Satellite positioning systems can be used to determine your location anywhere on the Earth, via satellite, wireless, time real and three-dimensional. Global Positioning System (GPS) (United States America) and the Global Navigation Satellite System (Russian Federation), are the two most popular and successful SPS systems. The system Galileo

(European Union) and the navigation system Beidou (China) are in progress of focus (The World Bank, & Global Facility for Disaster Reduction and Recovery (GFDRR), 2012).

In terms of dynamic mapping, the Office of Coordination humanitarian affairs, the Office of the United Nations High Commissioner for Refugees and the UN Humanitarian Centers are actively using technology SPS and Google Earth12 to post information on a map dynamic geo-referencing to make certain situations better known and improve humanitarian coordination, and to share the information in question. Google Earth has recently been used by many organizations during certain emergencies, especially when Cyclone Nargis ravaged the Myanmar in May 2008.

2.12 Summary

The literature review aimed to put together all the information in relation to disaster and disaster management in Sierra Leone. Preparing vulnerable populations to face natural disasters by designing relevant and accessible management plans while encouraging them to adopt certain protective measures can indeed help to mitigate physical damage, social and emotional problems that may occur during a mudslide.

CHAPTER 3 METHODOLOGY

3.1 Introduction

To address the research questions, this chapter lays down the research methodology including target population, instruments, the research design, and the sample size. In addition, the techniques which were used for data collection are discussed and so are the methods for ensuring that the instruments are valid and reliable. This research sought to explore the 2017 landslide incident in Freetown, its impact on the population and to critic the aftermath policy and programs put in place by the Sierra Leonean government as the consequences in terms of casualties and extensive damage to the roads, buildings, forests, and plantation and agriculture fields. In doing so, this research adopted a qualitative research design that ensured authentic findings.

3.2 The Research Design

The research design of the study was qualitative in the sense that it sought to understand how the GoSL responded to the 2017 mudslide natural disaster. Qualitative research design was subjective in nature as it sought to understand human behavior and the reasons that govern the type of behavior. Although there were different types of qualitative research designs including phenomenology, ethnography, grounded theory and case study. The study adopted the case study approach to assess and evaluate the policy implementation of the GoSL in responding to the 2017 mudslide natural disaster. This research approach provided insights into how the Government of Sierra Leone responded to the natural disaster, people's behavior and perceptions about the government's preparedness in responding to the natural disaster.

The qualitative research approach also facilitated the collection of in-depth information and better understanding of the responses of the GoSL in the aftermath of the 2017 mudslide disaster, and critic the success and recorded failure of the response. The choice of qualitative method was because the information needed was geared towards exploring people's experiences, emotions, and opinions on what happened during the 2017 natural disaster. So, it was imperative to be deductive (come up with new knowledge) rather than inductive (build on an existing theory). The researcher also accessed electronic documents on the internet, which enabled the collection of more data as intended to solve nvestigation.

3.3 Population and Sampling

The population for the study comprised 52 families affected by the disaster. Each of the families comprised of an average of five people. These people were left homeless after the mudslide as they all lost their homes and properties when the mudslide took place. These families were directly affected by the disaster because they were located at Motomeh Regent a disaster-prone area, Regent. Most of these people are jobless and a few of the men are into carpentry or work as drivers or security guards whiles the women stay home to mind the family. Their survival depends on the little they earn and those who do not work live from hand to mouth waiting on government to provide handouts which hardly come through.

Shortly after the 2017 disaster, the GoSL initiated a Project called "Mile 6" to construct houses where the affected/displaced individuals would be relocated. The researcher

decided to use these 52 families in Mile 6 Camp as a population as they had been directly affected by the disaster and would provide the required information.

3.3.1 Sampling

A list of displaced families staying in the Mile 6 Camp was obtained from the Head of the Camp, and the researcher employed systematic sampling methods to choose the study participants from the list 52 affected families. For the selection, the researcher randomly assigned two colors (white and red) to all the 52 families. All the families which fell under white color "white" color became the study participants, but those families which fell under the "red" color were excluded from the study. This means that 52 families divide by two equals to 26 families. Therefore 26 families formed the sample drawn from the 52 families. However, 9 were interviewed.

The interviewees from the affected families were exclusively the heads of families, either the female or male heads. In addition, interviews were conducted with 6 stakeholders. These stakeholders were chosen purposefully from environmental and other disaster management agencies in the Sierra Leone sectors based on their involvement in environmental governance issue. A letter of invitation was sent to identify key stakeholders. Key stakeholders were selected purposefully and included the Red Cross Society, the Office of National Security, the United Methodist Church, and the United Nations Specialized Agencies. The letter explained the purpose of the study and invited them to participate following the ethical guidelines of voluntary participation, respect, confidentiality, and anonymity.

3.4 Data collection Instruments

Data sources included in depth interviews and review of legal texts and documents. In-depth interviews were conducted for the households from the Mile 6 camp. Interviews were audio-recorded, and notes were taken. The interviews were done both in Krio (local language in Sierra Leone) and English.

3.4.1 In-depth interviews

Two factors made it possible to adopt in-depth interviews. First, the degree of freedom in the interview technique, and the ability of the interviewer to ask many questions and get varied responses from the interviewees through probing. In depth interviews also allowed in-depth information and rich data. In in-depth interviews the researcher suggested the area to be explored, informed by the research questions and research objectives. With the degree of freedom left to the interviewee, the information derived was deep thus a great characteristic of a qualitative study was maintained. The interviewer encouraged the interviewees to talk about their experiences, what they thought about government's response to the natural disaster.

3.4.2 Documentary analysis

A broad range of documents and policies were used throughout the whole process of the study. These included national laws, regulations and guidelines related to hazard and risk management. To gain information on the environmental context, exploration of existing documents, technical reports and policies were analyzed, which included the existing methodologies and various reports on hazard, vulnerability, and risk assessment in the

country. In addition, existing technical documents on geology and other environmental reports and analysis on Freetown were examined.

3.4.3 Observation

The researcher employed observations during the study, which gave a better perspective as to how the natural disaster had affected the community, the damage caused and government response in terms of policy implementation in liaison with other stakeholders including government agencies, civil society and international donor agencies. The observations were done during interviews, field visits and various meetings with stakeholders. This observation was meant to capture everything in relation to the 2017 incidence and the response thereafter. During the interviews, nonverbal communication was used to assess what was being said in realties to the realities on the ground. The way participants reacted to some of the questions, revealed a lot in relation to what happened to the affected individuals before, during and after the intervention.

Observation were made on the place of habitation where the affected individuals are now staying. Questions included: 'Are there enough housing for all the affected? Are there enough rooms? How many individuals are in one room? Are the infrastructures hygienic enough? (For prevention of water borne diseases)? What is the quality of housing? What is the quality of roads? Is there access to electricity and a marketplace?' In addition, the researcher took some pictures of the area, damaged homes, streets, farms, and water system networks. Records were done on how the affected area is being reconstructed, including roads and how life is coming back to normal after the 2017 incidence.

3.4.4 Focus Group Discussions

The researcher made use of focus group discussions to collect data. In this respect, the researcher had a short discussion with the internally displaced persons. The researcher recruited 8 families from the 52 in the Mile 6 camp for focus group. The focus group was an opportunity to explore free and unstrained opinions from participants about the topic under study. This was an occasion to verify the reliability and validity of the data gathered from both in-depth interviews and individual interviews.

3.4.5 Triangulation

There are four different types of triangulation namely data triangulation (time, space, and persons); investigator triangulation (multiple researchers in an investigation); theory triangulation (using more than one theoretical scheme in the interpretation of the phenomenon); and methodological triangulation (using more than one method to gather data, such as interviews, observations, questionnaires, and documents). The study adopted data and methodological triangulation as a way verifying interviewee responses and government policy interventions.

Various categories of respondents from different social settings were interviewed to get their experiences and opinions regarding the 2017 mudslide incidence in the Regent District and how it had affected the social, economic, and psychological lives of the population. The researcher then sought to draw views and perceptions from various individuals and representatives of the different organizations and government agencies.

These were then compiled to draw conclusions and recommendations. The researcher used this type of triangulation to validate the data given by various groups of respondents.

3.5 Data collection procedures

3.5.1 Access to research site

The researcher made sure that all the necessary tools and procedures were in place ahead of the research conduct. The following steps were taken by the researcher during data collection at the research site on the 27th of February 2019, the researcher wrote a letter to the Office of National Security, Freetown- Sierra Leone in the Disaster Management Department applying to Intern in their organization as well as to be assisted with data collection in relation to her study.

The Office of National Security is a security office under the office of the President that deals with all security issues in Sierra Leone. It is made up of several departments including the Disaster Management Department where she interned. On the 5th Of March 2019, she got accepted into the Office of National Security to carry out her research. On the 22nd Of May 2019, she made her first Visit to the Office of National Security and met the Disaster Management Director. She was then introduced to the other staff members of the Department. On the 27th of May, she started work as an intern at the Office of National Security while working on the collection of data as well. The first few weeks were slow, she worked with the department's data analyst who assisted her with hard and soft copies of information relating to her research.

In June 2019, the researcher alongside the Director and other partners like the ministry of lands, environment protection agency, and UNOPs, went for an assessment on the tree planting activity that was being carried out by UNOPS. This was part of the afforestation programme. The UNOPS officials explained that the tree planting was being done in three phases and that there were certain areas that were marked as a danger zone therefore there would not be any trees planted there. Most of the trees planted had benefits to the soil. However, they mentioned that they faced challenges with miners who came at night to mine the granite stones that were used. After the assessment, the team took a tour around the area, to visit homes that were marked as danger zones who had inhabitants that had refused to move out and told them that the government had decided they do so.

The researcher's visit allowed the researcher to get an appreciation of the full of assessments that the government was implementing in the disaster-prone areas affected by fire hazards and poor drainage systems. Observations were that people were putting up structures in areas that were affected by the floods a situation which would put people's lives in danger if heavy rains came. On the 12th of July 2019, the researcher alongside the Department, visited Mile 6. Mile 6 a shelter built for the 2017 mudslide victims. While there, she was able to carry out interviews and spoke to people on issues that affected them. This included lack of access to certain facilities, unavailability of clean water, among others. The researcher also visited the first camp where the 2015 flood victims resided.

On the 19th Of July 2019, she alongside a staff of the department attended a meeting at the Climate change and metrological Agency. This meeting was to strengthen the

coordination between partners and to put in place strong laws and policies that will be recognized. Every other Tuesday, there was a meeting for the western security agencies in Sierra Leone at the Office of National security. This meeting brought together the police, the army, the prison heads, Environment Protected Agency, Fire force and other security forces. This meeting was done twice a month to give updates on security issues in Sierra Leone and to find a way forward and she was privileged to attend this meeting on two separate occasions.

On the 29th of July 2019, the researcher attended an Africa Regional Data Cube (ARDC) training that was launched in five African countries namely, Kenya, Senegal, Sierra Leone, Tanzania, and Ghana. This was a means of using partnership, data, and technological innovation to power progress toward the Sustainable Development Goals'. In this training, partners were encouraged to work hand in hand with other organizations as this technological innovation will be very useful in solving most of the problems in Sierra Leone, in terms of agricultural land use, water and food security issues.

In July, there were reports of a crack that was found in the same Regent Motomeh area not far from where the last landslide took place. This was later assessed, and it was found that the area was indeed a danger zone and needed immediate attention as the residents needed immediate evacuation to prevent another disaster from reoccurring.

On August 2nd, Sierra Leone was hit with heavy rains that caused lots of damage and led to the loss of lives and properties. Towards the end of the rains about 7 people were recorded dead. This was along the way to the provinces and in the bay areas in Freetown.

Bridges were also destroyed. This led to the call of emergency meetings with national and International Stakeholders led by the Office of National Security and the Sierra Leone City Council headed by the Freetown Mayor. There was need for immediate registration and assessment of victims for response to be done. This was followed by several other coordination meetings with partners and the President as well as days of field work. Reponses were carried out ONS was represented by the researcher in the response headed by Care International to some of the affected areas. Distributions were both in cash donations and other immediate items like toiletries.

3.6 Analysis and Organization of Data

The processing of qualitative data was conducted thematically. Thematic analysis of data was done manually, using notes and paper to record. Transcription of data was the first step, and this consisted of listing the information collected and putting it in the form of a text called "verbatim" which represented the raw data of the conducted interviews. Transcription was organized in a format that allowed deeper analysis and categorization of information for further analysis.

This process was done without modification, interpretation, or abbreviation of the text. If the verbal discourse is poor, the transcription may include gestural behaviors of approval or rejection. The observation notes were recorded based on what the researcher saw, what she felt, what impressed her, and what surprised her. The observation notes captured everything that needed to be said, even the smallest details. They focused on discovering weak signals (the themes less frequent, which emerged, and which are carriers of the future) by escaping to the logic of the summary and synthesis.

Further, coding was done with an aim to explore, line by line, step by step, interview texts and observations. This consisted of describing, classifying, and transforming raw qualitative data according to the grid analysis. This was a heavy and painstaking process but allowed for clarity in terms of understanding people's views and perceptions about government responses and policy implementation strategies.

3.7 Ethical considerations

The entire research design and conduct was based on ethical standards reviewed and approved by Africa University research and ethics committee. Permission to collect data was sought from the appropriate ministry or departments of the Sierra Leone government, NGOs and from other relevant authorities. The primary aim of ethics in research is to protect study participants, especially vulnerable populations such as children, pregnant women and individuals with mental health issues, people from educationally/poor backgrounds or prisoners (Sumner & Cannon, 2014).

Authorities were given ample opportunity to ask questions and suggest revisions in procedures, and they helped to spread the word throughout the city. Prior to the interviews, focus groups and surveys, all participants were given an information sheet outlining the terms and conditions of the study. This provided enough information that enabled them to sign the consent forms and allow the participants to accept or refuse to participate in the study. The respondents were assured of their rights, including the right of consent, protection from disclosure of information, and respect for their privacy. In addition, the researcher made sure the security for those who collect data and for those from whom data

were collected was guaranteed. Issues concerning security included but was not limited to injury, death, and social stigma.

3.8 Summary

This chapter discussed the research methodology used to answer the research questions to accomplish the research. A description of the data collection methods, their presentation, and analysis was also given in the chapter. The researcher first put in place all the necessary tools, procedures, and resources (finances, material and human) needed for the whole process. Because carrying out a research is a complex issue, especially as this was her first time, the researcher applied for internship at the organization in charge of environmental hazards response and management.

This was an opportunity for her to do more of field work, which facilitated access to the information needed and helped the whole process. Participants were easy to get, as some of them worked at ONS or were partners that assisted in environmental issues. The observation process was great, as it allowed the researcher to collect data from the biggest to the smallest details. The following is chapter 4, which is going to break down the analysis of data and findings from the study.

CHAPTER 4 DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1 Introduction

This chapter presents the analysis and interpretation of the data results obtained in the field. Recall that our research aimed at addressing the issues of post disaster management including resettlement and rehabilitation. The data presented was obtained in a context of interviews with survivors of the August 2017 mudslides in Regent area, stakeholders in the field of environment, disaster management and humanitarian aids. All information collected allowed the researcher to highlight preliminary concepts that were necessary and essential to the study.

The research findings were based on the responses to the research questions given by the sample participants and various actors in the field of disaster management. Research findings showed that some of existing policies that had been used to address and prevent environmental disasters, exposed the government's response in terms of having robust policies to respond to natural disasters. Findings also showed that the adoption of ICT such as use of geographical information systems would strengthen policy implementation, as well as boost the capacity and level of coordination among main actors. The chapter also presented observations and conclusions concerning disaster management response.

4.2 Existing policies on disaster response and their effectiveness

4.2.1 Legal framework and policies

In relation to climate change and disaster management, the research findings revealed that Sierra Leone had signed and ratified several international instruments and conventions.

These included, The United Nations Framework Convention on Climate Change (UNFCCC), 1992, Ratified, on 22 June 1995; the Kyoto Protocol signed on 11 February 1993 and ratified on 7 June 2005; the Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (UNCCD), signed on the 11 November 1994 and ratified on 25 September 1997; and the Hyogo Framework for Action 2005 – 2015: Building the Resilience of Nations and Communities to Disasters, of which the current draft for Sierra Leone Disaster Management Policy is based.

4.2.2 ECOWAS Disaster Risk Reduction Policy of 2006

The research findings showed that the ECOWAS Risk Policy, like the Hyogo Framework which resulted from the gaps and lapses of the 1994 Yokohama Strategy were both non-legal binding instrument and therefore lacked an enforcement mechanism. This had left most State parties that were signatories to these instruments tardy in their implementations. The current draft of the Disaster Management Policy of Sierra Leone for instance, inspired by the Hyogo Framework, was drafted in 2006, a year after the Hyogo Framework was developed but had still not yet been passed in parliament.

Locally, the Disaster Management Department (DMD), within the Office of National Security (ONS), is responsible for handling all-natural disasters within Sierra Leone. The ONS was created by an act of parliament, the National Security and Central Intelligence Act 2002, and one of its functions is to serve as the government's primary coordinator for the management of national emergencies such as disasters, natural or artificial.

The DMD was solely created to serve this function. The DMD "the lacked of comprehensive Disaster Management Strategy, lack of coordinated and clear lines of roles and responsibilities, poor capacity on the part of national and local government to timely respond to disasters and poor integration of civil societies into effective disaster management," were sighted in the draft policy" (Government of Sierra Leone, 2006 p.55). The document however failed to provide such clarity in terms of roles and responsibilities as the term "the government" is ambiguously used throughout the document.

The government disaster response policy document highlighted the integration of disaster risk management into sustainable development programmes and policies, capacitating disaster response institutions, the utilization of knowledge, education, training and innovation to build safe resilient societies, monitoring and early warning and improving response effect through preparedness as its objectives. The draft policy addressed disaster in three phases: the pre-disaster phase, the disaster phase, and the post-disaster phase. With each phase, the Government through ONS provided coordination and direction whiles the implementing agency takes lead. Though quite comprehensive, the vagueness of the policy still left a lot of issues unaddressed in terms of roles and responsibilities, identifying types of disasters and first responders and training of first responders in terms of skills.

4.2.3 Mechanisms effectiveness: Interviews with the Displaced Victims in the Mile 6 Camp

The research team took a journey to Mile 6, a camp where some of 52 surviving families had settled. The purpose was to find out how effective the policies and programmess taken by the GoSL in the aftermath of the August 2017 mudslide.

The researcher asked Chairman of the Mile 6 Community if after two years, there had been improvements or if there was anything the people needed the government to do for them. His response was that the government had not done much for them. He said that the houses they were given were not completed, and the government did not clarify whether they were going to complete them. Most of the people did not even have a toilet, a kitchen door, or a toilet door.

In his concluding words he said that the government had promised to give them packages due to the donations that were coming in. Those things had not yet been delivered. They are still looking forward to those things even now (Interview with the Chairman of the Mile 6 Community, July 12, 2019).

During the interviews held at the Office of National security, one of the Displaced Victims said that the GoSL had not helped the real survivors. In terms of compensations, the survivor said that he did not receive anything. He was hospitalized when the distributions were going on, so he did not receive anything. He said that he did not even have accommodation (Interview with Displaced Victim, 9th July 2019).

In another interview with a victim at Mile 6, it was revealed that they were provided with water, but it was not of good quality. The water was coloured, and at times it was black. She stated that they had electricity except for those whose solar batteries had been stolen. In terms of Government assistance, she said that they were trying but the government was slow in responding to their needs even though the government had visited them before. They had wanted to know what the people were in need, but since then there had been no improvement in terms of provision of schools and hospitals. The informants said that even if the hospitals were built, they would still need money to buy drugs which were very expensive (Interview with 2nd Displaced Victim, July 12, 2019).

Interview with Displaced Victim 3 revealed that for them the two rooms allocated to them, they were paying 150 thousand Leones ($15 dollars) per month and those with three rooms and a parlor paid 250 thousand Leones ($25) per month. Some of those who received their benefits pay but since this incident occurred and he was discharged from the hospital he had not received any. He stated that some of them had lost children and were being provoked. The government did well by giving them accommodation, but they were wrong as they should have separated those who lost relatives from the others (Interview with 3rd Displaced Victim, July 12, 2019).

She stated that some parts of the rooms were leaking and that they lacked clean water, a community center, and access to a hospital facility. The hospital that was nearby had no medications unless one went to the pharmacy. Transportation to Waterloo market which was the closest was said to be expensive. The transportation was 10 thousand Leones ($1) so if you had 20 thousand Leones ($2) what would remain? Also, they did not have much

in their area of residence and the city center would have been better as they were really suffering. She said that she has a lot of things to say to the government. Most of them were hospitalized and most of the survivors were suffering. They said that the government had promised them a package to start a new life, but nothing had been availed.

4.2.4 Effectiveness of mechanisms: Findings from Focus groups

The researcher also used focus group discussions to get more information that would answer the research questions. The focus group discussions involved 4 married Displaced Victims. They said that they were not working since they were no jobs available.

On the condition of the housing they were given in the Mile 6 Camp they said that some places are were okay, and some were not. One of them said that where he was given was not okay because three rooms had no doors, the kitchen had no door and even the toilet. There was a nice flush toilet, but no toilet seat. When they moved in, other people had stolen the toilet seat and the septic tank was broken. During the rainy season they had to use the bushes and the children walk bare footed putting them at risk of catching diseases. Also, at night there were lots of mosquitoes. Displaced Victim 3 said that it was not bad, but the solar system had been stolen and she also had no toilet seat and the doors were stolen. The Displaced Victim 4 alluded that her house had solar system, but it did not function properly.

All the participants said that they were unhappy as the facilities they had were poor and the cost of living was high. If they had jobs she said, it would have been better. When the

incident occurred, the President visited the site and promised to assist and the first lady also told them that she had them at heart, but those things had not been delivered (Focus Group with Displaced Victim, 12th July 2019).

4.3 Response of Government of Sierra Leone to the 2017 mudslide disaster

After the mudslide took place in 2017, the Sierra Leonean government put some measures in place as response mechanisms. These measures were both short and long term. Some of these included:

4.3.1 Construction of the Mile 6 Camp: housing Displaced Survivors

Interviews with the Sierra Leone Red Cross society revealed that one main project that was put in place after the mudslide was the building of the Mile 6 Camp. The camp was the settlement for the 2017 mudslide survivors. It was a settlement for 52-families of the 2170 victims affected by the disaster. The question now was where were the remaining victims? This was a major concern in terms of disaster management as some of the people who lost their lives were still homeless and had no proper housing. This put them in great danger as they faced cold weather conditions at night, mosquitoes and are even at risk of being attacked by thieves.

The families that resided in the mile 6 housing stated that the housing environment was to a greater extent proper. However, there were a few complaints of the lack of proper toilet facilities, and housing equipment's as some rooms lacked doors and some of the solar panels in some houses had been stolen. Most importantly, the community lacked safe

drinking water. This is a health concern as we know that water borne diseases could have great consequences.

4.3.2 Creation of a Shelter Pillar

Research findings showed that on Thursday 17 August 2017, the National Strategic Situation Group (NSSG) had a briefing on assessing the government response to the disaster. The NSSG comprised of heads of Security institutions, who met to discuss on national Security issues with possible recommendations and solutions. Following the briefing, the Chair, Retired Brigadier. Jao Jah-Tucker commanded the creation of a dedicated Shelter Pillar made up of the relevant MDAs and international partners. The National Commission for Social Action (NaCSA) was unanimously nominated to head and coordinate the activities of the Shelter Pillar.

Policy orientation

Under this shelter pillar, a few key policies were outlined. The purpose of this policy was to provide immediate temporary shelter to affected populations in which their safety was paramount; Full compliance with the regulations prohibiting occupation and human settlement of protected, dangerous, or disaster-prone areas; Removal of populations living in areas designated as high-risk and disaster-prone and discouragement of them occupying these in the first place (Sierra Leone National Disaster Risk Management (DRM) Strategy and Action Plan, 2014).

Hosting with family and friends (not limited in Freetown)

GoSL had a strong preference to encourage affected people to stay with family and friends in the immediate wake of a disaster that renders them homeless. Elements that supported this policy orientation include the following:

Initial and on-going consultation with host families to achieve buy-in and to identify modalities for hosting affected persons; Support to hosting families for the duration of the stay (three to six months); Agencies to take-up foster care for children and other vulnerable persons; Agencies to design instruments/tools/programs to rehabilitate and integrate vulnerable persons into risk free areas; Careful considerations to ensure incentives are ordered to encourage this option above others.

Emergency shelter

Research findings revealed that the GoSL recognized that there would be circumstances during which refuge with host families or friends) was not feasible. In such instances, the GoSL secured immediate temporary accommodation and built schools, mosques, churches, and community centres. However, this was intended to be an immediate emergency response. Within hours or days, the expectation was to move these affected persons (homeless) to alternative accommodation (see below) to enable these immediate temporary structures to be returned to their normal use and to minimize disruptions to the users of these buildings. Elements that support this policy orientation included:

Consultations with the affected persons (homeless) about immediate shelter-related help; Collaboration with the relevant MDAs, beneficiaries of shelter related items must be

discouraged from returning to protected and disaster-prone areas; and consultation with host communities and relevant officials and stakeholders to achieve buy-in and to identify modalities for location of temporary shelter.

Moving affected and at risk persons from Disaster prone Areas

In some cases, displaced persons affected by a disaster sought refuge in nearby locations that are themselves at risk of follow-on incidents. Alternatively, people near the incident may be unaffected directly but sufficiently at-risk and those living in areas declared as protected and disaster prone to justify activation of the policy. GoSL identified areas to be vacated, zoned by level of risk.

Interviews with government officials revealed that the GoSL recognized that there were complex dynamics at play resulting in settlement of vulnerable, protected, or other lands ill-suited to human habitation. In the absence of viable options, relocated persons would quickly return to their former homes, rendering the policy a failure. These factors were considered when locating areas to accommodate persons vacating these areas: consultation with affected populations; government verified title deeds held by owners of land property in the areas to be vacated; action to vacate illegal settlements were done in the 6 months following the 14th August 2017; and voidance of perverse incentives likely to produce behaviours counter to the intended intention of the policy.

Actions taken by Shelter Pillar commission

On Friday, 18th August, after receiving the mandate, the Shelter Pillar commissioned a data collection exercise using open data kit (ODK) in communities displaced by the flood and mudslide incidents command centers. The exercise at that time had been completed in the (Dwarzark) community and was ongoing (achieved about 70% completion) in the three communities of Regent, Kamayama, and Kaningo. Meanwhile, there was information on relatively new incidents in centers in Juba Barracks and Pentagon. Table 2 below provides data on affected households registered in the various communities.

Table 1: Data on Affected Persons

Community	Total HH	Under 5Yrs	5-18Yrs Males	5-18Yrs Females	Adult Males	Adult Females	Total People
Dwazark	71	39	26	62	132	114	373
Kamayama*	55	61	70	55	182	180	548
Kaningo	82	63	109	81	223	261	737
Regent	91	20	50	91	170	181	512
Grand Total	290	183	255	289	707	736	2170

4.3.3 Action by National and international agencies: the example of RED Cross plan of actions

Government representatives reported during interviews that it was recognized that though 1,905 households were affected, the communities at wide were also impacted and remained at risk of future disasters. Therefore, the following proposed components of the programme provided support for communities to build resilience and complement the livelihood component, which targeted the most vulnerable households directly affected by the disaster.

Four areas of support suggested by the Red Cross:

Livelihood or Skills Training

According to the Red cross Director, the Shelter Pillar programme provided support for restoring the livelihoods of the people who were affected by the mudslides and floods and contributed to their future resilience. In his view, livelihood and skills training were important as these empowered many of the affected families to recover and rebuild their lives in a more sustainable manner. Skills training as part of capacity building was also done in partnership the GovSL international and national organizations.

Water, Sanitation and Health

The Red Cross director also revealed that they were engaged in Water, Sanitation and Hygiene (WASH) interventions to meet basic needs and improve safe access to water in quality and quantity, sanitation, and improved hygiene practices in affected communities. The Red Cross Society of SL had recommended to government that additional activities

be undertaken to address unmet needs. The following were proposed to ensure that unrestricted access to safe drinking water was made available, which is consistent with SPHERE minimum standards in terms of quantity, quality, and accessibility.

Psychosocial support

The Red Cross Director further stated that, the Red Cross aimed at promoting the psychosocial well-being of the affected people, the Red Cross continued regular follow-up through one-on-one discussions and group talks, with survivors and other affected individuals. It was revealed that the Red Cross had trained SLRCS psychosocial support (PSS) staff and volunteers and taken the following actions to enhance psychosocial well-being. They had also provided individual and group psychosocial support to affected people at the centers, host families and in hospitals. They also provided transportation in the form of an ambulance to survivors to access medical care, had trained schoolteachers in PFA for school children and carry out psycho education sessions for distressed school children and provide education materials for school going children.

Cross Cutting Support: Community Engagement and Accountability (CEA)

Evidence gathered during interviews revealed that the Community Engagement and Accountability (CEA) approach was provided timely, adequate, and relevant information to improve and save lives, while promoting reciprocal communication and fostering an environment of greater confidence through the creation of feedback mechanisms. The CEA approach allowed communities to participate in the design and implementation of Red Cross response activities, and ensure that their needs, concerns, and suggestions guide Red Cross actions.

4.4 Challenges the Sierra Leonean government faced in responding to the 2017 natural disaster

4.4.1 Distribution of Humanitarian Aid to Survisors

Evidence from survivors regarding response to the 2017 mudslide disaster, indicated that the Sierra Leonean government faced a few challenges, in relation to humanitarian aid distribution, as there were some irregularities. During interviews and focus group discussions most survivors indicated that this was because the wrong individuals went for registration and collection of humanitarian aid packages. The Executive director of an organisation called Climate Change Forum Network, in Sierra Leone said that they had advocated for the formation of ID cards to enable a form of data collection. However, this was not done, and people were still grumbling and suffering because of hunger and poverty.

He also stated that the Office of National security should ensure that they continue to provide packages and basic amenities for the displaced especially those residing at the mile 6 camp as they are living in horrible conditions. Another challenge he mentioned was the lack of preparedness by the Government of Sierra Leone. He recommended that the Sierra Leonean government needed to raise awareness through jingles on television and radio and also strengthen its approaches to ensure a safer nation for future generation (Interview with Executive Director, Climate Change Forum Network, Sierra Leone, 18th July 2019).

4.4.2 Lack of proper data collection techniques

During a post mudslide meeting held with stakeholders, a few stakeholders mentioned the lack of a singular data collection technique as one of the major challenges. This made it difficult for the exact number of deaths and survivors to be known as each organization had its own method that was used leading to inaccuracies in knowing the exact number of the affected people and the resources needed in the implementation of the response policy strategy (Observation by the researcher during data collection).

4.4.3 Improper drainage systems and road connectivity

After the mudslide, some of the affected areas were hardly accessible due to poor road connection and flooding caused by drainage systems. This made response very difficult and lead to inaccuracy in registration of displaced persons as not all of them could be reached thus not all of them received humanitarian aid packages.

4.4.4 Mottoes Community

Evidence from survivors indicated that another challenge faced by the Sierra Leonean government was the evacuation of survivors from the incident site. After the mudslide occurred a team of stakeholders from Ministry of lands, the Office of National Security, the army, and the police went to the site to evacuate residents as it was a danger zone. However, the researcher also observed that many of the survivors kept going back claiming for more support thereby making the work of the government a difficult one as the residents could be at risk should a future disaster occur. (Researcher observation during field visit, 2019).

4.5 Mechanisms to strengthen the existing policies to mitigate the effects of natural disasters in Sierra Leone

4.5.1 Introduction of Technology

The executive director of the Sierra Leonean Metrological Agency in an interview with the researcher stated that, there were challenges with having the right equipment to determine how the impact of the natural disasters and the required intervention given that SL as a country was prone heavy rains and more floods because of its proximity to the ocean. He indicated that unlike Sierra Leone, most developed countries were at an advantage in terms of technology to manage disasters. In his view, the government should increase the budget allocation to the metrological department.

He also suggested that there was need for more reliable climate information to inform the public that a natural disaster is eminent. Since that mudslide happened nothing had been discussed in that aspect so there was acute lack of information among the populace. He also stated that he and some of his staff were advocating for the introduction of scientific data, through extensive research methodologies as no scientific research had been done to really tell us what the actual cause was, the challenges, where we went wrong and how the government should to those challenges as preventive mechanisms to prevent reoccurrence. He also emphasized the need for coordination among key stakeholders. In his view there was need for regular dialogue and a national platform to discuss disasters and not wait until they occur.

4.5.2 Scientific Research and Proposals

In addition to technological innovations, the executive director of Climate Change Forum Network, Sierra Leone emphasized the need for research as it could be a great opportunity because most of the Sierra Leonean institutions have not been embarking on research.He said that Sierra Leone had the internal resources for research were not fully utilized hence the need to partner with donor in the area of research and learn from others about disaster management strategies (interview held on the 18th July 2019).

4.5.3 Migration and Proper Housing Policies

With reference to the development of housing policies responsive to disasters the Director of communications, United Methodist Church, Sierra Leone Annual Conference stated that the Freetown community had developed policies especially after the civil conflict which displaced many people. Many people moved into Freetown from the provinces after the war and some stayed because they had not found jobs. Freetown became congested and due to the need of housing people started carving out places to stay leading to a lot of illegal structures across the city.

He further highlighted that before the civil war there were only few houses on hills like residential areas and Fourah Bay College (FBC) but now people have been going up the hills cutting down trees even when there is a government ban. As a Mechanism, he suggested that people should be asked to relocate to their original homes while the GoSL ensured that there were proper housing policies and permits for residents who wanted to

put up structures in Freetown. (Interview with the Director of Communication, UMC held on 18th July 2019).

4.5.4 Effective Land Policies

Interview with a key informant from the Office of National Security, Director of Provisional and Border Security (PBS) revealed that a lot of factors were responsible for the incidence rampant environmental damage and degradation. These included the activities in geographical area people were destroying the environment by cutting down trees, stone mining, sand mining and poor construction of houses in that area, He suggested that land Permits should be granted to only those people who will have fulfilled legal requirements and meet the criteria set by the government. (Interview held on the 13th August 2019).

4.6 Summary

This chapter formed the backbone of this research study where the researcher tried to address each, and every research question and the findings were presented and discussed. Findings showed that the occurrence of previous disasters had to an extent raised some level of awareness among the Sierra Leonean citizens, but there was still a lot to be done by the Sierra Leonean government. Sierra Leone was not entirely disaster free and if the government did not act fast in handling certain situations then the country would remain to disasters. The country did not have enough resources or funds to manage disasters and over dependent on international organizations and partners a situation which interviewees and stakeholders said was unsustainable.

CHAPTER 5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provided a summary of the key findings of this study. All the findings were informed by the various data acquired from the respondents and documents that were analyzed. The chapter draws conclusions on the state of disaster management in Sierra Leone, the policy responses by the government and other partners. The chapter also provided implications from the findings of the study in various aspects of disaster management and response. Although there were many actors in involved in the disaster response the coordination of their activities was said to be haphazard. The chapter reemphasizes the need to have information technology and communication integrated in this field so that there is coordination and empowerment of actors.

5.2 Discussion

During the research, the researcher was privileged to meet with different stakeholders and key informants as well as interview some of the 2017 mudslide survivors. It was found out that the Sierra Leonean government was doing a great job in terms of disaster management as compared to previous years. In fact, the occurrence of previous disasters has to an extent raised some level of awareness among the Sierra Leonean citizens. But there was still a lot to be done by the Sierra Leonean government.

Organizations were trying their very best to cooperate and work together with the government, but differences in interests seem to be a hindrance. The government was still very much involved in how organizations function and due to bureaucracy, specific

interests, and interference it was hard for certain organizations to perform their duties freely. Evidence showed that the disaster management department was under staff and there were only but a few qualified people in Sierra Lione that had the right educational background and qualification in disaster management. There needs to be training of the populace to bring other people on board in case of emergencies. The department in the aspect of training community volunteers was doing a great job, however there are still a few constraints as these people were not yet fully recognized by other stakeholders.

Findings also revealed that due to bureaucracies and lack of resources it had been hard to fully engage and consult citizens on the implementation of disaster management policies and strategies. Some citizens were informed enough to guide the government on early warning signs and assessments. However, sometimes necessary actions were not taken on time due to the involvement of several stakeholders in the decision-making process sometimes leading to situations that could have been avoided. Instead of cooperating, many organizations were working on their own making progress difficult as they were all hoping each institution performed its duty and hence cooperation from different stakeholders was important for effective disaster response and management.

In relation to the victims, there were two camps in Mile 6, the 2015 flooding victims and 2017 mudslide victims. Most of these victims had in some way been abandoned by the government or organizations. These victims needed assistance, the 2015 flooding victims lived in homes that were not made from proper building materials. Most of them were just surviving, living from hand to mouth. It was true that the government could not help all of them but at least there was need for skills training to empower the people.

Based on the interviews conducted, it was safe to say that Sierra Leone was not yet disaster free and if the government did not act fast in handling certain situations then the country would always be prone to disasters. Findings indicated that the country did not have enough resources or funds to manage disasters and was still dependent on international organizations who also had their own interests or may had other commitments.

Evidence from different stakeholders revealed that early warning signs should not be ignored, and risks should be mitigated. Sierra Leone was a developing country that was still recovering from a protracted civil war that lasted 11 years. The Ebola virus that took the country by surprise hit some of the country's institutions hard. A lot of doctors and health care workers lost their lives, and the health system was yet to recover from that. A lot of volunteers lost their lives due to insufficient protective resources and little information as it was an emergency.

In terms of flooding, there needs to be consistency in public education on the risk of floods year in and year out and not only during the rainy season so that Sierra Leoneans are fully aware and there should also be evacuation where possible. Sierra Leoneans living close to the ocean line should be evacuated and there should be policies and programmes put in place to minimize migration.

Research evidence also revealed that the resources available in Freetown could not cater for people currently living in the city. Policies should also be followed up and carried out effectively if serious and more devastating disasters are to be avoided. The cutting down of trees and mining were found to be endangering the environment, leaving the land bare

making it prone to disasters. It was also found that when people migrate and construct illegal structures, it caused danger both to the land and to people as some of these places were on hills and mountains which were easily affected by disasters like landslides and earthquakes as some of the soils and housing materials were not strong enough for such structures.

As revealed by some of key informants, there was an improvement in disaster management in Sierra Leone in terms of awareness. This to an extent had helped greatly in tackling disaster management issues. To improve disaster management in Sierra Leone, there needed to be more involvement of technology. There needs to be a 24/ 7 disaster call center if possible and citizens be informed on the institutions and their functions as some of them make reports to the wrong offices. Also, there should be technology used to check the causes of a disaster after it had occurred.

Therefore, in terms of technology there needs to be a lot of improvement in Sierra Leone. To help detect disaster before and after they occur and help find solutions to them. There also needs to be equipment and trained staff as well as tools that give accurate information and data. There needs to be training of people to handle statistics on disasters as from the last mudslide it was obvious that different organizations had different statistical data and not everyone was trained to handle such data as the data collection process was also faulty. This gives wrong figures and wrong information.

5.3 Conclusions

Since the Sierra Leonean government was ill prepared and the citizens were not educated and aware about certain issues. Sierra Leone being a third world/developing country it was going to take time to recover from such disasters as the government relied heavily on funds from donor partners. Due to the geographical location of the country and the fact that it was prone to disasters such as flooding, there should be preparedness mechanisms before the raining seasons to evacuate people from disaster prone areas and to raise awareness so that people are trained and informed on what to do so as to reduce the effects caused by disasters.

5.4 Implications

5.4.1 Rethinking disaster management in Sierra Leone

Key informants were of the idea that there were lot of things to be done. Some of them suggested coordinated efforts using ICT or GIS facilities as part of the national disaster management systems and environmental policy enforcement, and creation of a national agency like Environmental Management Agency (EMA) in Zimbabwe. While there were policies in place government evidence revealed the need for government to enforce these policies. For example, people should not be building in disaster-prone areas. There should be policies that should prevent or prohibit the cutting down of trees, prohibition of granite mining thereby preventing the soil from being exposed to the hazards of weather and climate.

Government and partners should come together to enforce policies because if the government fails to enforce these things then worst disasters could occur. Firstly, there was the need of a national platform a try to distinct the mandate for institutions, ONS should include population education and a change of mindset. All illegal constructions should cease, and people be relocated to safe places.

5.4.2 Application of Technology in Disaster Management or Use of Technology in Disaster Management

Information and communication technologies (ICT) are now inseparable from sustainable development. They measure pollution indices, trace food products, streamline the flow of transport, bring together environmental NGOs, anticipate health and ecological threats, and so on. The use of digital tools has today become a major socio-political issue in governance situations marked by uncertainty. It has therefore become a necessity to call on experts (environmentalists, psychologists, psycho-sociologists, consultants) with innovative technological ideas to intervene.

5.4.3 Observation

There is poor coordination between partners. For example, many stakeholders do not attend coordination meetings. Also, policies that exist are not properly enforced. Due to this, you find out that there are certain authorities like the ministry of lands who for certain reasons still issue out license to people to build in danger zones, making it difficult for other stakeholders to carry out their jobs. Also, there is little been done in risk mitigation and reduction. Most of the resources are been put into response and little effort done to

prevent the problem thus the issue remains a problem year in and year out. Many of the promises made by the government to the victims have still not been fulfilled and since the one-year anniversary many government organizations have abandoned them.

5.5 Recommendations

Considering the findings of the study and the observation made during the whole process of the conduction of the research, the researcher as well as key informants put the following recommendations forward, to different institutions and individuals, so that the existing gaps and loopholes are addressed swiftly.

5.5.1 Recommendation from various key informants

The researcher wanted to find out from various partners and agencies, their suggestions on what the GoSL should do so that this type of disaster may not occur again. Some of them suggested environmental protection, and policy enforcement. It is clear than key informants are for the idea that there still a whole lot of things to be done. While there are policies in place government must do everything to enforce these policies. For example, people should not be building in those disaster-prone areas, in fact they should not even be living there at all but unfortunately the same government that makes these policies is the same government functionaries that allow people to build in those areas. There should be policies that should prevent or prohibit the felling down of trees. To prohibit mining of granite thereby preventing the soil from being exposed to the hazards of weather and climate.

For the President of Council of churches Sierra Lione . It was all about environmental protection. He said that Sierra Leone had policies, very sound policies of environmental protection but there is this great weakness of the inability of government to implement and enforce these policies. People build in disaster prone areas, up the hills and down the slope.

He said that there must be enforcement to evacuate or forcefully remove those people from those areas and demolish all those structures that have been there. The government needed to also engage in an intentional program of afforestation and reforestation in those places where the land is bare so that there will be a tree covering in other to prevent erosion and possible mudslide disasters (Interview, with President Council of Churches Sierra Leone August 12 2019).

For the logistics officer ONS, what helps is a lot is preparedness he said, Sierra Leone must strengthen its preparedness activities more than its response and recovery activities. Strengthening its response activities will help reduce the impact of disaster. For instance, cleaning of drainages, clearing of the bits and pieces, plastic, and all of it on the streets will help. That will avert flooding. This was not to say that it will not flood but even if it floods the impact would be less. He added that the government should at least come up with policies on where to build and where not to build. He suggested that funds to address disasters should be put aside so that it will not take time to raise funds which are needed (Interview with logistics officer, August 20, 2019).

For the Executive director, climate change forum network, Sierra Leone, there should be segregation of roles and responsibilities. He suggested formation of a national platform which would offer recommendations to the President on disaster and climate change. Secondly, somebody should be at state house to tell the president what have been done as a nation to strengthen our mechanism. And thirdly partners should develop an empowered act and try to act fast (18th July 2019).

The Director of Provisional and Border Security said that:

As a nation, there needed to be sincerity and we must take the bull by the horn. One of the recommendations he gave was that there should be a system where in we will not allow people to continue to construct houses in potentially dangerous areas as in the name of politics as some people will say these are our voters, let us leave them (August 13, 2019).

5.6 Suggestions for Further Research

5.6.1 Government officials

Research findings revealed that disaster management should be everybody's business as disasters affected the whole country when the strike .Even though it was important for powers to be separated, the researcher observed that the Government was not involved in the disaster management processes except national disaster emergencies. Even though government was updated when there were other disasters, throughout the year there were no programs in relation to disaster awareness by the heads of states. Since Sierra Leone was said to be the third most vulnerable country in terms of disasters, there should be a ministry for disaster management which would help facilitate things or better still the Agency as desired by the Office of National Security. There should be people in the Office

of the President that are knowledgeable about disasters and the system of bureaucracy should be minimized as during the process certain important decisions are left pending because of the government's current interest.

Government should ensure that there were disaster management courses added to the academic curriculum in secondary schools so that they have trained and knowledgeable people on disaster management that can come up with creative and innovative solutions from a very young age.

In terms of policies, it revealed that over the years many people have migrated into Freetown in search of better living. Thus, there has been over crowding as there is an increase in population around certain areas making the resources available in Freetown insufficient for the people. It has also led to the underdevelopment of the provinces as many young minds and able bodies have migrated into Freetown putting up structures in unsafe places prone to disasters. Therefore, a form of the "Ujamaa" program/policy should be adopted in the sense that the government should ensure that there are equal opportunities and programs in the provinces and rural areas so that urbanization would be reduced and development in the country would be even.

5.6.2 Office of national security/ disaster management department

The Disaster management department was not a fully independent body. The system of bureaucracy made it difficult for it to operate independently. Many of the important decisions were made by the top thus a top-bottom approach. This made the decision-

making process a long one and due to political interests, some issues were left unhandled. If the department was made an agency as suggested, it would be easier for them to operate faster. Also, if there were available resources in terms of an emergency disaster fund set aside and an equipped disaster store filled with relief items response will be faster rather than waiting for donors and partners making the process longer. Also, as realized it was in 2015 that a camp site was formed due to the Ebola virus. This camp site however could not hold most of the affected population and there were not enough items to maintain hygiene. Therefore, government should work on building permanent infrastructures that would be used to camp victims during disasters with proper hygiene.

In terms of statistics, there should be a uniformed method used to collect data/figures operated by skilled personnel as during emergencies accurate figures are needed thus it is very important that skilled people be encouraged to come on board also, there should be proper data collection methods and instruments for statistics that can be used nationwide. Due to the rate of flooding in the country, there should be training of lifeguards for search and rescue and boats should be provided where necessary as certain areas are inaccessible during floods and it makes the registration and response process difficult. The department should have its own ambulance and emergency vehicles for emergencies.

5.6.3 Metrological and climate change agency

Climate change was said to be a worldwide issue, however in Africa there was lack of technology and skills to accurately detect weather forecasts. It is very important for skilled technicians such as I.T technicians and geologists to be on board to be able to apply modern technology in weather forecasts by giving accurate information helping to

evacuate danger zones before disasters strike. Also, technology could be used to detect the cause of disasters and how it could be averted.

5.6.4 Environment protection agency

Also, many of these agencies though independent still face interference from top government officials in relation to interests. There should be strict environmental policies on deforestation, illegal stone mining and the construction of houses in disaster prone areas. Land permits should be issued out before structures are put up. All structures put up should be up to the housing standards and illegal structures should be demolished.

5.6.5 Community members

There should be community education, awareness, and mobilization. The community members should be encouraged to work hand in hand with their local authorities and they should take it upon themselves to report any early warning signs. Also, there should be emergency call numbers that are publicly known making it easier to communicate. Community volunteers should also be vigilant and mobilize the community on disaster management. There should be proper trainings and a proper system that is inclusive of community volunteers.

5.6.6 Victims

Victims should be provided with free medical aid at least for a period. They should also be vocational training in certain skills like weaving, carpentry, tailoring etc. so that they

may be able to fend for themselves and not be totally dependent on government and those who can afford better jobs be encouraged to do so or giving a push to do so.

5.6.7 Partners

There should be strategic and strong partnerships with NGO's to assist with funds and resources for training and disaster mitigation programs. There also should be cooperation between ministries so that they work together as a team with each of them bringing in their resources to help combat disasters. There needs to be more training of human resource to help with search and rescue when emergency strikes. Need for emergency vehicles and enough ambulances for each organization.

References

Barry, H. (2006). *United Nations Spatial Data Infrastructure.* Washington*: UN Geographic Information.*

Benson, C., & Clay, E. (2004). *Understanding the Economic and Financial Impacts of Natural Disasters.Disaster Risk Management Series.* Washington, D.C: World Bank.

Centre for Research on Epidiomology of Disasters. (2015). *Poverty 1996-2015 & Death.* Geneva: United Nations Office for Disaster Risk Reduction.

Department for International Development. (2006). *Helping to Achieve Sustainable Poverty Reduction in a Vulnerable World.* . London: DFID Policy Paper.

Disasters, C. f. (2018). *Centre for Research on the Epidemiology of Disasters. (2018). Natural disasters 2017.* Brussels: The International Disaster Database.

Douglas, I., Alam, K., Maghenda, N., & Campbell, J. (2018). Climate change, flooding and the urban poor in Africa. Environment and Urbanization, 20(1). *Environment and Urbanization*, 187–205.

Earth Observation Group. (2004). *Report of the Subgroup on Architecture.* Boston: Francis Group Publishing.

Emergency Events Database. (2008). *International Disaster Database.* Brussels: Catholic University of Louvain.

Floyd, D. L., Prentice, D. S., & Rogers, R. (2009). A meta-analysis of research on protection motivation theory. 30(2). *Journal of Applied Social Psychology*, 407-29.

Food and Agriculture Organization. (2011). *Rain fall as agricultural drive.* Freetown: Francis & Taylor Publishing.

Framework for regional cooperation on space technology strategies in Asia and the Pacific. (2005). *A study report prepared for the expert meeting on applications of space techniques to disaster management.* Bangkok: Chiang Mai.

Gaillard, J. C., Pangilinan, M. R., & Cadag, J. R. (2008). Living with increasing floods. *Disaster Prevention and Management*, 383–395.

Gallo, V. (2018). *The Luxembourg Red Cross makes a donation appeal for support the thousands of flood victims in Sierra.* Freetown: Red Cross Press.

International Displacement Monitoring Centre. (2013). *Disaster-induced internal displacement in the Philippines.* Geneva: Troly Publishing.

John, T. (2004). *Disaster Risk Reduction.* Japan: Kobe.

Kellett, J. (2014). *Financing Emergency Preparedness in the Philippines.* London: ODI.

Last Mile Initiative. (2007, May 25). Connecting Rural Communities DOT-Comments e-Newsletter. Mongolia , Oulan-Bator, Mongolia .

Macheal, B. (2016). Worldwide prevalence of hypertension exceeds 1.3 billion. *Journal of American Society of Hypertension*, 753-754.

Magdelaine, C. (2017). *Statistics of Natural Disasters.* Paris: Notre-planet-Info.

Mandira, S., & Sushil, P. (2006). *Information and Communications Technologies for Disaster Risk Reduction. Policy Dialogue on Reducing disaster risk at the regional level.* New Delhi: New Delhi press.

OCHA. (2017). Flash Update OCHA West & Central Africa. *UN Office for the Coordination of Humanitarian Affairs 2017 (8)15*, 20-55.

Patrick, P. (2008). *The role of information communication technology.* Tufts: The Fletcher School.

Ruocco, A. D., Gasparini, P., & Weets, G. (2015). *Urbanisation and Climate Change in Africa.* Switzerland: Springer.

Shanmugam, G. (2015). The Landslide Problem. *Journal of Palaeogeography 2015, 4(2)*, 109-166.

Spittal, M., McClure, J., Siegert, R., & Walkey, F. (2015). Optimistic bias in relation to preparedness for earthquakes. *Australasian Journal of Disaster and Trauma Studies 2015 (6)1*, 1-10.

The Beijing Action for Disaster Risk Reduction . (2018). *Asian Ministerial Conference on Disaster Risk Reduction.* Beijing: Ulaanbaatar.

The World Bank. (2016). *Prevention of natural disasters. Global Facility for Disaster Risk Reduction and Recovery.* Washington.

The World Bank, & Global Facility for Disaster Reduction and Recovery. (2012). *Managing disaster risks for a resilient future.* Washington DC: World Bank and GFDRR.

United Nations. (2011). *United Nations Framework Convention on Climate Change. Report of the Conference of the Parties on its sixteenth session.* Bonn, Germany: UNFCCC.

United Nations. (2013). *Implementation of the International Strategy for Disaster Reduction. Report of the Secretary-General.* . New York: United Nations.

Williams, C., & Kniveton, D. (2011). *African Climate and Climate Change.* London and New York: Springer.

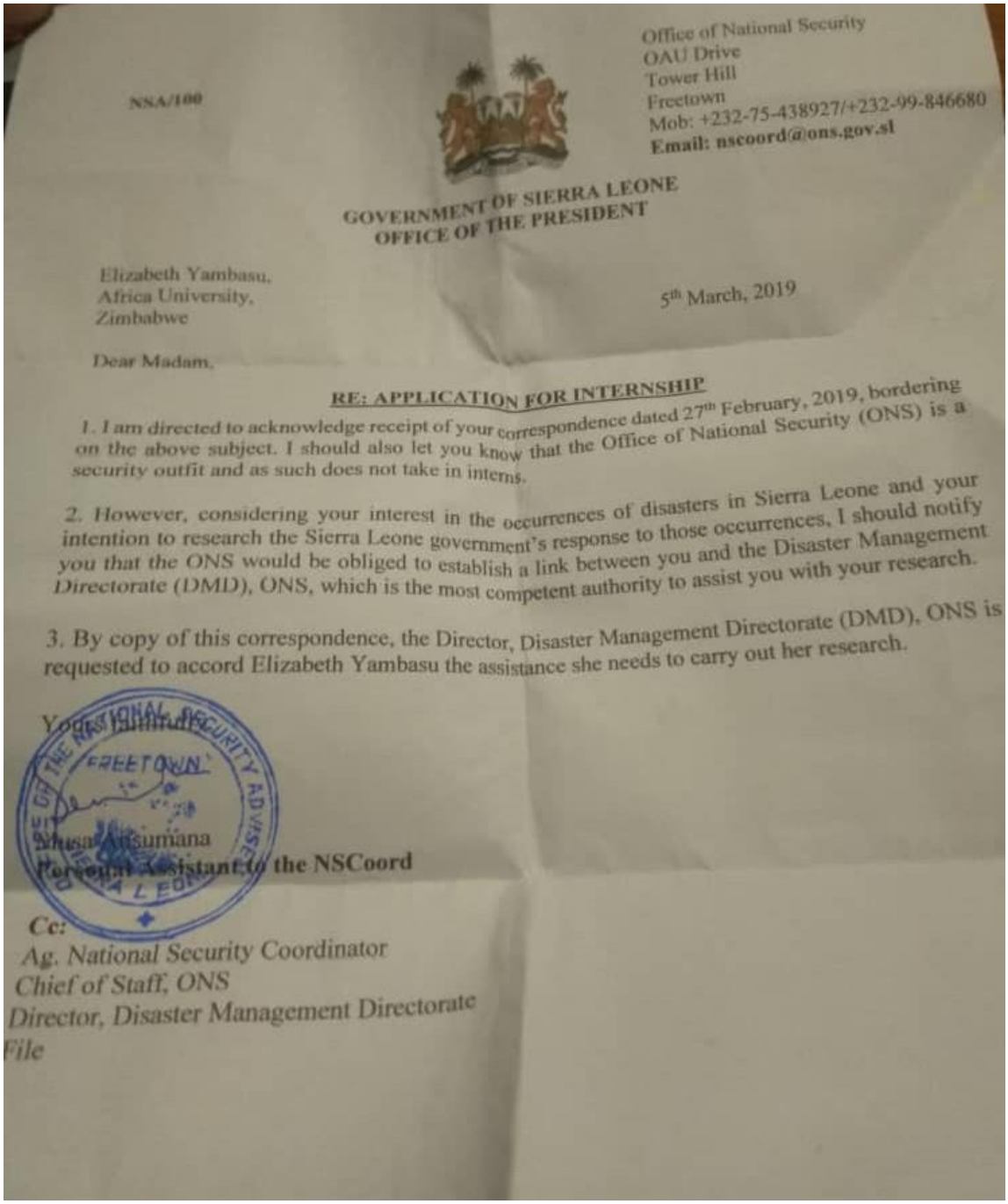
World Bank. (2017). *Rapid Damage and Loss Assessment of the Sugarloaf Landslide and Floods in the Western Area.* Freetown: Francis& Taylor.

World Meteorological Organization. (2005). *Chairman's report on the thematic meeting on the applications of ICTs. World Summit on the Information Society.* Beinjing: World Meteorological Organization.

Appendices

Appendix 1: Office of National Security: Assessment device

Appendix 2: Institutional Permission to Undertake Research



NSA/100

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GOVERNMENT OF SIERRA LEONE
OFFICE OF THE PRESIDENT

Elizabeth Yambasu,
Africa University,
Zimbabwe

5th March, 2019

Dear Madam,

RE: APPLICATION FOR INTERNSHIP

1. I am directed to acknowledge receipt of your correspondence dated 27th February, 2019, bordering on the above subject. I should also let you know that the Office of National Security (ONS) is a security outfit and as such does not take in interns.

2. However, considering your interest in the occurrences of disasters in Sierra Leone and your intention to research the Sierra Leone government's response to those occurrences, I should notify you that the ONS would be obliged to establish a link between you and the Disaster Management Directorate (DMD), ONS, which is the most competent authority to assist you with your research.

3. By copy of this correspondence, the Director, Disaster Management Directorate (DMD), ONS is requested to accord Elizabeth Yambasu the assistance she needs to carry out her research.

Yours faithfully,

Musa Ansumana
Personal Assistant to the NSCoord

Cc:
Ag. National Security Coordinator
Chief of Staff, ONS
Director, Disaster Management Directorate
File

Appendix 3: AUREC Approval

AFRICA UNIVERSITY
(A United Methodist-Related Institution)
INVESTING IN AFRICA'S FUTURE

AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-0202) 60075/60026email: aurec@africau.edu website: www.africau.edu

Ref: AU1061/19

10 September, 2019

Elizabeth Yambasu
C/O CBPLG
Africa University
Box 1320
MUTARE

RE: THE RESPONSE OF SIERRALEONEAN GOVERNMENT TO DISATERS: A CASE STUDY BY THE 2017 REGENT MUDSLIDE

Thank you for the above titled proposal that you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

a) Research proposal
b) Questionnaires
c) Informed consent form

- **APPROVAL NUMBER** AURECAU1061/19

This number should be used on all correspondences, consent forms, and appropriate documents.

- **AUREC MEETING DATE** NA
- **APPROVAL DATE** September 10, 2019
- **EXPIRATION DATE** September 10, 2020
- **TYPE OF MEETING** Expedited

After the expiration date this research may only continue upon renewal. For purposes of renewal, a progress report on a standard AUREC form should be submitted a month before expiration date.

- **SERIOUS ADVERSE EVENTS** All serious problems having to do with subject safety must be reported to AUREC within 3 working days on standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.

AFRICA UNIVERSITY
RESEARCH ETHICS COMMITTEE (AUREC)
10 SEP 2019
APPROVED
P.O. BOX 1320, MUTARE, ZIMBABWE

Yours Faithfully

MARY CHINZOU – A/AUREC ADMINISTRATOR
FOR CHAIRPERSON, AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE

Appendix 4: Informed consent

My name is Yambasu Elizabeth, a Master student doing public policy and governance. I am conducting an academic research on the 2017 landslide incidence in Freetown, Sierra Leon. I am going to give you information and invite you to be part of this project. You do not have to decide today whether you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research. There may be some words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. The information you give will be treated with confidentiality, therefore you will not be required to indicate your names anywhere on this questionnaire as a measure of confidentiality. The information provided will be used for the purpose of this study. I kindly request you to fill the questionnaire. Your responses will be highly appreciated.

Purpose of the research

The purpose of this study is to explore the 2017 landslide incidence in Freetown, its impact on the population and critic the aftermath policy and programs put in place by the Sierra Leon government as the consequences are in terms of casualties and extensive damage to the roads, buildings, forests, and plantation and agriculture fields.

Procedures and duration

If you decide to participate in this study, you will be required to complete the questionnaire or answer interview questions. It is expected that this will take only about 15 to 20 minutes. To avoid work disruptions, you will be given three days to complete the

questionnaire form so that you can fill it at your spare time. The short interview will be conducted upon placing an appointment.

Risks and discomforts

No risk or discomforts associated with this study.

Benefits and/or compensation

There will be neither direct benefit nor any incentive to you to take part in the research, but your participation is likely to help us find out more about the environment policy and help in the prevention of natural disasters.

Confidentiality

Given the sensitivity nature of this research, the researcher shall protect the participants making sure that their contributions will be treated with utmost anonymity/confidentially and will be used purely for academic purposes. No names will be captured on the questionnaires and interviews. Only the researchers will know what your number is and we will lock that information up with a lock and key. It will not be shared with or given to anyone except the research supervisor and school board.

Voluntary participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, all your rights as a citizen will

continue to be observed and nothing will change. You may change your mind later and stop participating even if you agreed earlier.

Offer to answer questions

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

Authorisation

If you have decided to participate in this study, please sign this form in the space provide below as an indication that you have read and understood the information provided above and have agreed to participate.

---------- ----------

Name of Research Participant (please print) Date

---------- ----------

Signature of Research Participant or legally authorised representative

If you feel that you have been treated unfairly and would like to talk to someone other than the researcher, please feel free to contact the Africa University Research Ethics Committee on telephone (020) 60075 or 60026 extension 1156 email aurec@africau.edu

Name of Researcher: **Yambasu Elizabeth**

Appendix 5: Informed consent (Krio version)

Wetin d wok dae about n decide if u want for do am

Me name na Elizabeth Yambasu en me na Masters Student wae dae do Public Policy en Governance. Ar dae fen information wae go ep me for know about di landslide wae apin na Fritong insai Salone, 2017. Wit dis wok, ar go able gi yu information en usef go able ep me. Noto wantem wantem yu go tok if yu go ep me wit dis wok, but e go fine back make yu tok to posin way go lisin to yu en tel you about dis wok. Noto altin yu go sabi as yu dae ep me so but ar dae beg make you tel me wetin tranga for yu en ar go broke am dong. Tu yase nor go yeri wetin we dae tok but so, so yu nor nid for tel me yu name or write am sef. Wetin yu de tel me so na e go ep for make di wok fine. Na dat make ar dae beg make yu ep me en dat go make ar gladi bad bad wan.

D reason y ar dae fen information for dis wok

D reason y ar dae do dis wok na for fen out about d landslide wae apin na Fritong insai 2017, how people dem suffer n judge how'd Salone government in plan dem dae go on after wetin don apin because people den die n wound, road den pwel, ose, farm n bush den all pwel.

How'd wok go go n how long e go take

If u gree for do dis wok mean say u go complete dis paper or ansa question dem wae ar go ask u. Na 15 to 20 minutes normor u go tak for do dis wok. For make u put yay good

pan dis wok ar go gi u d paper for tri days so u go do am wae u get time. Me n u go talk wan to wan wae we 2 agree for do am.

D bad tin wae possible for apin n wetin go make u feel bad

Natin bad nor go apin or make u feel bad as u dae do dis wok.

Wetin u go gain n (or) wetin we go gi u

Natin nor dae wae u go gain directly or wae ar go gi u for do dis wok but wetin u go tell me go make we know more about d plan for we environment so dat oda bad tin nor go apin.

Na me n u normor go know

As we know how den wok ya dae, d person wae dae fen information go make sure say no oda person nor go know wetin una talk but n e go use am normor for e lan book biznes. No name nor go dae na d paper or Usai we dae talk. Na only d person wae dae fen information normor go know u n dat go be e beleh secret. Nobody again nor go know pas d person wae na d boss pan d wok or d big alejo den na school.

Na u go gree for take part na dis wok

Nobody nor go fos u for take part na dis wok. Na u sef go gree if u want or nor want. Whether u choose for ansa or not, u go still enjoy all wetin u for enjoy as Salome man or uman n dat nor go change. Even if u bin don gree fos tem n den u say u nor gree again, u kin still stop for ansa d paper.

Ar ready for ansa u question dem

Bifo u put pen na paper na for ask me any question na any part na d wok wae tranga for u. Na for take d time wae u want for tink fine.

Wetin go show say u gree for do d wok

If u gree for do dis wok na for sign na d space wae dae under for show say u don read n understand all wetin dae na d paper n ready for do d wok.

D name of d person wae dae take part na dis wok. Date

D signature of d person wae dae take part na dis wok or person wae u gree for do am for you.

If u tink say den nor treat u fine n u wan talk to oda person apart from d wan wae get d wok na for contact Africa University Research Ethics Committee on telephone (020) 60075 or 60026 extension 1156 email aurec@africau.edu

D name of d wan wae get d wok.

Appendix 6: Interview guide for affected families

My name is Yambasu Elizabeth, a master's student doing public policy and governance. I am conducting an academic research on the 2017 landslide incidence in Freetown, Sierra Leone. I am going to give you information and invite you to be part of this project. You do not have to decide today whether you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research. There may be some words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. The information you give will be treated with confidentiality, therefore you will not be required to indicate your names anywhere on this questionnaire as a measure of confidentiality. The information provided will be used for the purpose of this study. I kindly request you to fill the questionnaire. Your responses will be highly appreciated.

Section A: Demographic information

Q1. Respondent' age: 1) 18-20 ☐ 2) 20-30 ☐ 3) 30-40 ☐ 4) 40-49 ☐

1. Supply of safe drinking water to the city ☐ 2. Roads ☐ 3. Market ☐ 4. Bridges ☐

Q2. Can you describe the human, economic and social loses caused by the 2017 incidence?

1. Tremendously huge ☐ 2. Huge ☐ 3. Significant ☐ 4. Not significant ☐

Section B: Knowledge and preparedness on natural disasters

Q20. Before the incidence, had you received any guideline for safe shelter construction?

1. Yes ☐ 2. No ☐

Q3. Were you warned before the 2017 incidence? 1. Yes ☐ 2. No ☐

Q4. According to you, what do you think are the roots causes of that incidence?

1. Heavy rains ☐ 2. Soil quality ☐ 3. Overpopulation ☐

Section C: Policy and programs

Q5. What kind of help did you receive in the aftermath of the event?

1. Placed in camps ☐ 2. Treatment ☐ 3. Food ☐ 4. Counselling ☐

Q6. Did you receive any compensation? 1. Yes ☐ 2. No ☐

Q7. Do you hope to return to your homes, lands?

1. Yes. ☐ 2. No ☐

Q8. What is the government doing about it?

……

……

Q9. You were promised to be resettlement by the government, any success so far?

……

……

Q10. what can you tell the government of Sierra Leone?

……

Appendix 7: Interview guides (organizations and focus groups)

Q1. Were there any early warning systems before the disaster?

Q2. What was the government response in term of policy, programs and structure creation?

Q3. Describe the capacity and level of coordination among main actors in disasters prevention

Q4. Describe the challenges you face as an institution in disaster management

Q5. What was your roles as an organization before, during and after the 2017 disasters?

Q6. Which services did u offer to victims, and still offering?

Q7. What are you and/ or the government of Sierra Leone doing to cover the policy and program gaps in regard to disaster management?

Q8. What type of recommendations can you proffer to solve the challenges faced in the management of disasters?

Appendix 8: Interview guide translated in Krio language

1. How di wok look lek

   Q1. Bifo d 2017 troble, una bin don get ani kin sign?

   Q2. Wetin government do for make di law dem way de sober?

   Q3. Explain how government and oda organizations dem kin wok for solve den trouble dem.

   Q4. Explain wetin yu organization pass way bin at for una.

   Q5. Wetin yu bin de do bifo dis tin and d tem way d tinada happin?

   Q6 Wetin yu do for ep or still dae do for ep den wan wae suffer?

   Q7. Wetin yu or d Salone Government dae do for ep so dat wetin una don put dong go ep make this tin nor apin again?

   Q8. Wetin yu go tok way yu tink say go ep d way government kin solve problem.

2. How for do di interview (organizations and focus groups)

1. Bifo d 2017 troble, wetin yu institution don do for ep for prepare for den tinada wae go apin en how for avoid den?
2. Di government or yu institution bin know say den kind tin ya go apin?
3. Wetin yu tink say na d main tin wae make dis tin apin?
4. Wetin yu bin do wae dis tinada bin dae apin?
5. Wetin yu do for ep or still dae do for ep den wan wae suffer?
6. Na for explain how dis tin make moni biznes, mortal man n oda ladi dadi den suffer.

Wetin yu or d Salone Government dae do for ep so dat wetin una don put dong go ep make dis tin nor apin again.

Figure 4: UNOPS tree planting activity

(Source: field data collected by author, June 21, 2019)

Figure 5: Improper drainage system

(Source: field data collected by author, June 21, 2019)

Figure 6: The mini landslide area

(Source: field data collected by author, June 21, 2019)

Figure 6: Improper waste management

(Source: field data collected by author, June 21, 2019)

Figure 7: Destruction of roads

(Source: field data collected by author, June 21, 2019)

Figure 1: Mile 6 Camp

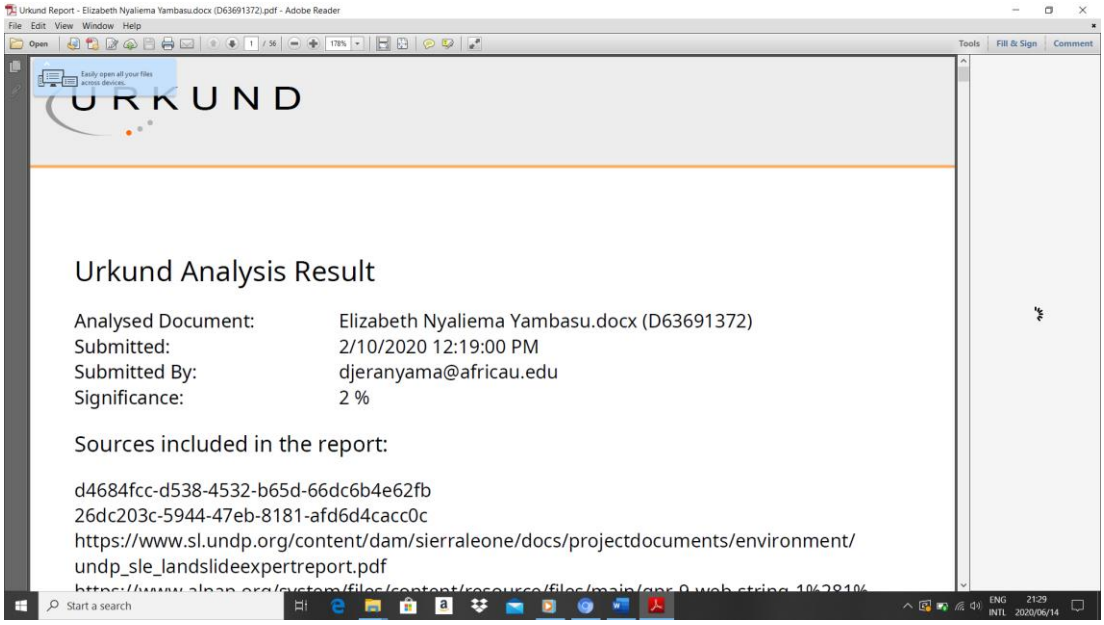
(Source: field data collected by author, June 21, 2019)

Figure 2: Camp built after the 2015 flooding

(Source: field data collected by author, June 21, 2019)

Figure 3: Motomeh community

(Source: field data collected by author, June 21, 2019)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