

Flooding in Benue State (Nigeria): A Profile of Institutional Neglect

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## **Abstract**

With progressively devastating consequences, flooding has become increasingly common in Nigeria, particularly in Benue State. In studying repeated flood disaster situations in this state, a discernable pattern may be identified in regard to the inadequate and sometimes complete absence of institutional response and recovery strategies. Despite the continued impacts flood disasters have on both humans and the environment in Nigeria, little research has explored in detail the social and political circumstances that foster these disaster situations.

Earlier conceptualization of disasters as purely scientific events in disaster research, has since the early 1960s been replaced by a perspective which views disasters as systematic events having deep institutional roots with social catalysts that have incubated over long periods of time. This premise forms the basis of the social vulnerability approach, which asserts that in the assessment of hazards and disaster risks, the consideration of social vulnerability must be given equal importance as the purely physical or scientific criteria in evaluation. In adopting the social vulnerability approach, this research seeks to analyze the political and socio-economic circumstances within which flooding in Nigeria regularly occurs. The study takes as its point of departure, the 2012 flooding event. While the social vulnerability approach identifies the factors that engender vulnerable social circumstances, it does not analyze how these factors are created. This gap in the existing research creates a methodological challenge for those striving to link their empirical work to the conceptual work that is currently available.

My research addresses this limitation in the existing disaster research literature by identifying and analyzing Institutional Neglect as the root of social vulnerability. Based on a case

study methodology, the research adopts various qualitative methods including questionnaires, interviews, focus groups, and personal observations to understand how flooding disasters in Nigeria result from forms of social vulnerability that are rooted in Institutional Neglect. In this light, this research adopts a critical interdisciplinary orientation, especially in its engagement with Development Studies. This is because, ultimately, Institutional Neglect is a problem of development. As such, the introduction and conclusion chapters address the flooding within the context of development.

*Keywords: Disaster research, natural hazards, flooding, social vulnerability, institutional neglect, Development, Nigeria.*

# Dedication

To my late husband Dr Simeon Agada- *This too, did not scare me!!!*

To Audu, Igoche, Mama, Papa and Enu'Joy-*ALWAYS*

And to Justine and Caleb  
*The children who never stop celebrating their mother*

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## **List of Abbreviations**

BNPL	Basic needs poverty line
CPI	Corruption Perceptions Index
DM	Disaster management
DRM	Disaster risk management
DRR	Disaster risk reduction
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GNI	Gross National Income
HDI	Human Development Index
IDDR	International Day for Disaster Reduction
HPI	human poverty index
IMF	International Monetary fund
SAP	Structural adjustment Program
SRP	Seasonal Rainfall Prediction
UNDP	United Nations Development Program
UNDP-PC	United Nations Development Program- Pacific Centre
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISDR	United Nations International Strategy for Disaster Reduction Secretariat
UNOCHA	United Nations Office of Humanitarian Affairs
UPE	Universal Primary Education
UN/ISDR	United Nations International Strategy for Disaster Reduction

# Chapter 1

## Overview of research

This research focuses on understanding the circumstances that give rise to the increasing incidents of flooding in Benue State, Nigeria. Flooding is the leading cause of disasters occurring from natural hazards worldwide (Olanrewaju, C. C., Chitakira, M., Olanrewaju, O. A., & Louw, E. 2019; Jonkman, 2005). Flooding is responsible for 6.8 million deaths in the 20th century. It brings in its wake, injury, displacement, and death. Between 1995 and 2015, the lives of 2.3 billion people were affected, making floods accountable for 47% of all weather-related disasters globally (UNISDR 2015).

Floods are the most common and recurring disaster in Nigeria. Annually, flooding typically causes deaths, wanton destruction of properties, and displacement of communities throughout the states. In recent decades, flood emergencies in Nigeria have increased in terms of both frequency and impact. For example, in 2010, about 1,555 people were killed, and 258,000 more displaced by flooding. The next year, August 2011, flooding was reported all over the country. In the northeastern part of Nigeria, flooding took a deadly toll when torrential rains pushed rivers over their banks, collapsed mud houses and washed away vegetation and livestock. Displaced in a single local government area (LGA) were some 1800 persons (IRIN, 2011).

While floods impact the country each year, the damage and losses from the 2012 floods were unprecedented. Heavy rains between July and October 2012 combined with rising water levels resulting from the runoff contributed to the flooding of human settlements located downstream of the Kainji, Shiroro, and Jebba dams on the Niger River; the Lagdo dam in Cameroun on the Benue River; the Kiri dam on the Gongola River; and several other irrigation dams. The flooding led to an overflow of river discharge, aggravated by the breach of irrigation

reservoirs and caused the destruction of roads, bridges, and other infrastructure, ruining property, killing livestock, inundating homes, and leading to the temporary displacement of people. There was also a significant and sustained interruption of production activities. The disaster, which started as seasonal flooding in different parts of the country at the onset of the rainy season in April, became intensive in late August and mid-September. There was a record of unprecedented flooding in Adamawa, Anambra, and Taraba states. Particularly hard hit were the North Central states of Nigeria, especially Kogi and Benue. Other states that were submerged by floodwaters include Bayelsa, Edo, and Delta, among others. According to the National Emergency Management Agency (NEMA, 2012), the flood killed 363 people, injured 5,851, affected 3,891,314 and displaced 3,871,53.

More and more Nigerians are exposed to the risks of flooding and will continue to suffer its impacts. A 2014 report estimated that about 70 percent of Nigerians are at risk for flooding (Citizen Advocate, 2014). Indeed, loss of and properties from flooding have become an annual staple in Nigeria, with increasing costs. There is, therefore, a real pressing need to study the circumstances in which a significant portion of a country's population continually faces threats from flood hazards. This research takes as its departure the flooding disaster of 2012, with a focus on Benue State.

## **Background of study**

On March 1, 2012, the Nigerian Meteorological Agency (NIMET) put out a public announcement outlining the 2012 Seasonal Rainfall Prediction (SRP). It predicted massive flooding and erosion in some parts of the country, especially the coastal zones and river catchment areas later in the year. It advised that the federal government create awareness of the impending event, to reduce damages and loss of lives and properties, especially in areas prone to

riverbank overflows. It also predicted that the displacement of a large section of the population would result from the flooding (Vanguard News, 2012). Between July and October 2012, flooding resulting from the predicted heavy rains pushed rivers over their banks, submerging hundreds of homes and thousands of acres of farmland. More than 7.7 million people were affected by these floods. More than 2.1 million had registered as IDPs (Internally Displaced Persons), almost 600,000 houses were damaged or destroyed, while tragically 363 people were reported dead. Out of Nigeria's 36 states, 32 were affected by the floods (NEMA, 2012; OCHA, 2012). The flooding was the worst in more than 50 years, according to the National Emergency Management Agency (NEMA). Benue State was one of the worst hit during the flooding disaster of 2012 in Nigeria. The impact was significant because many of its towns and villages are on the border of the River Benue. The River Benue is a major river that passes through Benue State and has its origin in the Adamawa Plateau of Northern Cameroon as the Benué River. River Benue experienced severe flooding in 2012, which cut across all the major towns on the bank of the river and ID:EZ73421 its tributaries along with other smaller streams and tributaries. Affected communities in the State included: Makurdi, Apa, Agatu, Otukpo, Guma, Buruku, Tarka, and Kasina-Ala local government areas (LGAs). In addition to the heavy rainfall which inundated the State and pushed the River Benue to overflow, water was released upstream from the Lagdo dam in Cameroon. The release of water from the Ladgo dam in Cameroon worsened the disaster's effects and made recovery even more difficult. Figure 1 shows the situation overview and the human impact distribution of the flooding disaster. Figure 2 shows the spatial distribution of areas affected by extreme floods in Nigeria.

Figure 1 Situational overview and the human impact distribution of the flooding (OCHA, 2012)

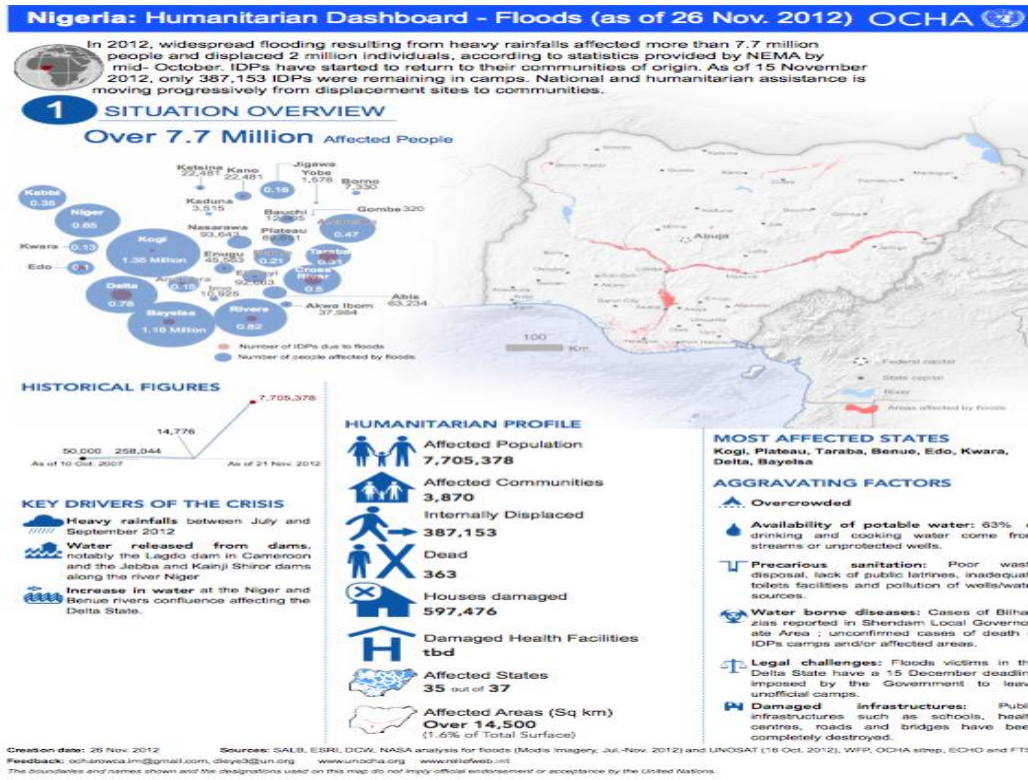
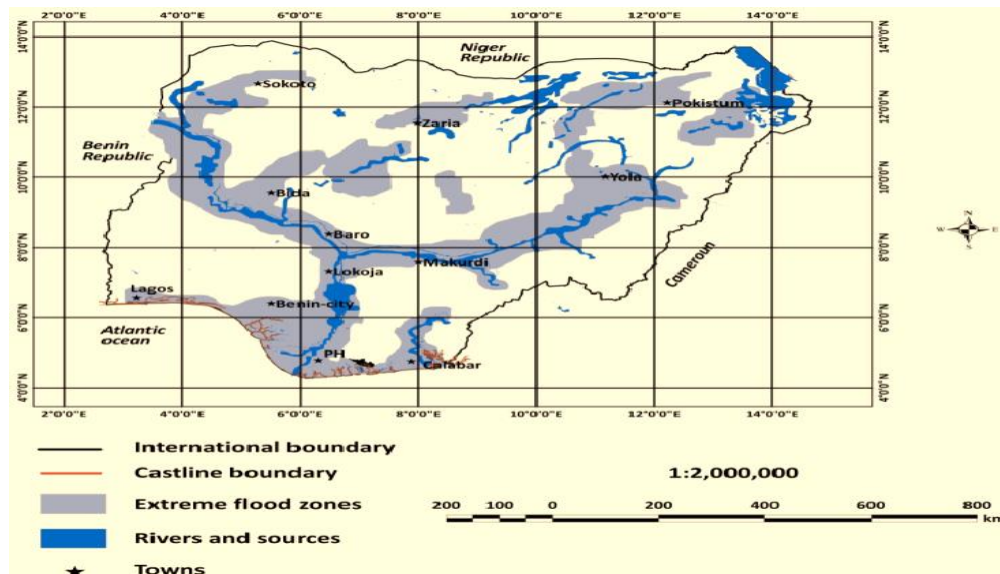


Figure 2 Spatial distribution of areas affected by extreme flooding in Nigeria (2012)



Source: Federal Ministry of Environment (2012).



## **Statement of the problem**

The general perception is that heavy rainfall is often the cause of flooding, which is true for Nigeria. However, heavy rainfall is not a new phenomenon in Nigeria. Heavy rainfall, especially in late seasonal rainfall periods, is a fact of Nigeria's natural processes. However, what is becoming an increasingly familiar phenomenon is disasters induced by flooding. Disasters resulting from flooding have now become an expected annual event, particularly in Benue State. The loss and suffering that accompany these disaster events are raising critical questions regarding the continual exposure of individuals to the risks of flooding. It also raises questions of why the government is always ill-prepared and ill-equipped to respond to the devastation from flooding effectively. Indeed, the sheer magnitude of human suffering and the inadequate responses of government to the many flooding events demand an investigation, especially the floods of 2012.

Concerns that emerged after the 2012 flooding include the lack of adequate comprehension of the phenomenon of flooding itself. Both the press and institutional operatives were quick to label the flooding disaster as natural, an 'act of God', ordained by some supernatural being. For example, a popular Nigerian print media source, The Vanguard, headlined the event as the "rage of nature", while referring to it elsewhere as "2012 year of Flood of Fury". Reporting on another flooding in Benue State, 2017, five years after the 2012 flooding, a government official presented the following narrative of the event:

As a government, we feel that this should not have happened, but it has happened. It is a natural disaster; water is beyond human control; it must come whether we like it or not. It is a natural disaster in the sense that it is rain. We cannot prevent rain from happening. The flooding was an unexpected disaster. We were preparing for September; we did not know it would come in August.

The reaction of the reporter who published the report captures the concerns which quicken this research. According to him:

“The arguments are unfortunate. Flooding in Benue, especially Makurdi, is not novel. Between September and October 2012, flooding displaced over 700,000 persons in the State, with thousands of farmlands, houses, and huts either submerged or washed away”.<sup>1</sup> This report was in reference to the flooding in 2017. The 2017 flooding, five years after the

2012 flooding, demonstrates a pattern that legitimizes this research. Explaining the flooding as an 'act of God' for all intent and purposes is willful ignorance and an excuse by the government to abandon its responsibilities. It provides an opportunity for public (government) and private institutions (e.g., insurance operatives) to abandon their obligation to keep citizens safe or provide aid in times of disasters. Such an explanation also represents an absence of political will to commit to crafting, analyzing, promoting, and implementing public policies that build resilience to the challenges of flooding. It also reflects Nigeria's entrenched history of government unresponsiveness to the needs of its citizens in general.

Nigeria's development indicators reveal immense human and natural resource endowment, and Nigeria is a world-leading petroleum exporter for over half a century. Nevertheless, it suffers from persistent mass poverty and under-development. Institutional bureaucratic processes that have accumulated through time create conditions of socioeconomic fragility and overall precarious livelihood and deny a large population of already marginalized citizens the capacity to resist the menace of flooding. A weak or complete lack of infrastructure has allowed poverty to become an entrenched way of life in the country. Poverty makes it difficult, if not impossible, for individuals to accumulate personal or human capital to build resilience to the threats of natural hazards. There exists a relationship between the socio-political context in which flooding occurs

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<sup>1</sup> <https://www.thisdaylive.com/index.php/2017/09/12/the-benue-floods/>

in Benue State and institutionalized corruption and the mismanagement of resources. In this context, challenges arise regarding disaster management in areas concerning the provision of assistance to facilitate planning and recovery from the impacts of flood events. Examination of these types of issues (i.e., issues about factors that hamper the efficient and effective delivery of public goods) and how they connect to those of exposure to flooding hazards is one of the main tasks of this research. This approach is called the social vulnerability approach in disaster and vulnerability research. The following section provides an overview of the social vulnerability approach.

## **Summary of research and an overview of the social vulnerability approach**

The research starts with the recognition that disasters occur within a complex historical, socioeconomic, and political context. As Cutter, Mitchell & Scott (2000: 717) point out, a vulnerability assessment requires an audit of all potential hazards and an understanding of the human dimensions involved. This multi-faceted approach draws on the social vulnerability framework which holds that while hazards may be natural, disasters are quintessentially the outcome of historical processes which have changed over time and are linked to risks that have accumulated because of political and socioeconomic forces (Bankoff, 2007: 110; Ali, 2002: 145, Hewitt, 1998:82; Birkmann, 2006:11, Schneiderbauer & Ehrlich, 2004:13). In this light, the research argues that, at the core of the 2012 Benue River flooding disasters, are conditions of socioeconomic fragility and political disenfranchisement, which created an overall precarious state of livelihood resulting in vulnerability to flooding hazards. These conditions have accumulated through time and deny a large population of already marginalized citizens the capacity to build resilience to the menace of flooding. The literature review section in Chapter 2

presents the concept of social vulnerability in greater detail. However, a short introductory overview here is necessary to set the context for subsequent discussions.

Social vulnerability to natural hazards is the subject of a considerable amount of work. Many researchers have stressed the need to identify and understand what drives social vulnerability. For example, according to Bergstrand, Mayer, Brumback, & Shang (2015), understanding what drives social vulnerability is essential to helping communities acquire the assets to build the strategies needed to minimize losses from disasters. The international community also emphasizes the importance of understanding the socioeconomic and political factors (critical factors of social vulnerability) that influence disaster. For example, the Hyogo Framework for Action 2005–2015 (the final document of the World Conference on Disaster Reduction) emphasizes the need to promote strategic and systematic approaches to reducing vulnerabilities and risks to hazards, stating that:

the knowledge of hazards, and the physical, social, economic, and environmental vulnerabilities to disasters that most societies face, is the starting point for reducing disaster risk and promoting a culture of disaster resilience. The ability to reduce vulnerability also lies in the knowledge of how hazards and vulnerabilities are changing in the short and long term, and the actions taken, based on that knowledge (UN 2005, preamble).

The social vulnerability approach is part of a broader social constructionist trajectory of disaster research and disaster management practices, where the non-physical or social factors that create the conditions necessary for catastrophe are studied. The perspective maintains that while hazards may be natural, disasters are quintessentially the outcome of sociological processes which have changed over time and linked to risks that have accumulated because of socioeconomic and political forces (Bankoff, 2007:110; Birkmann, 2006:1; Schneiderbauer & Ehrlich, 2004:13; Ali, 2002:145). According to this perspective, the accumulated socioeconomic and political processes are the functions of human actions. The social vulnerability approach also

considers the resilience of a community when confronted by threats that can range from natural or human-caused disasters to disease outbreaks.

Various factors that contribute to social vulnerability have emerged from different accounts in disaster and vulnerability research. For example, Cutter (1996) developed a Hazards-of-a-Place model of vulnerability, which became the basis for developing useful sets of vulnerability indicators in later years. Some indicators of social vulnerability to hazards identified in existing vulnerability literature include but are not limited to socioeconomic status, race and ethnicity, gender, age, employment, housing tenure, and disability (Wisner, 2016; Cutter, 2003). In Chapter 5, data from the research and other studies are used to determine the exact factors that contributed to the Benue River flooding. The factors are then used to develop a Social Vulnerability Index (SoVI), which measures the level of vulnerability within a community. It identifies communities that are most at risk and who cannot respond to threats from hazards and, as such, may need support in preparing for hazards events or recovering from disasters. The SoVI can help public officials and local planners better prepare for and respond to emergency events like flooding, hurricanes, disease outbreaks, or exposure to dangerous chemicals. The factors of social vulnerability are then used in Chapter 8 to analyze the impact of social vulnerability in the flooding disaster.

Although the social vulnerability approach identifies indicators or factors which influence social vulnerability, it, however, fails to identify the source from which they originate. Most disaster and vulnerability research identify the factors that create vulnerability but stop short of identifying the origin of these factors. For example, poverty/socioeconomic status in disaster research is an indication of social vulnerability. However, while poverty/socioeconomic status provides evidence that poverty exists, it does no more than that. It does not identify the

conditions that create poverty. For example, Rufat, S., Tate, E, Burton, C, Maroof, A. (2015) reviewed several case studies on social vulnerability to flooding and profiled the leading drivers of social vulnerability. Their findings identify indicators (or contributing variables) of social vulnerability, including socioeconomic status, risk perception, social capital, etc. However, they fail to go beyond identifying these indicators and neglect how these factors originate in the first place. Research has not formally established the source of social vulnerability. It is a gap in the literature which the research will fill.

The failure to identify or recognize the origin of social vulnerability creates methodological challenges for some researchers who adopt the approach. Such researchers struggle to link empirically-based case studies to established conceptual frameworks in ways that satisfy the inquiry and produce meaningful results. For example, Zou and Thomalla (2008) identified a gap between theoretical work on vulnerability and empirically-based case studies. In a meta-analysis of several studies on social vulnerability to coastal hazards in South and Southeast Asia, they found that reference to identified conceptual frameworks was rare. It is because the existing frameworks are not relatable. Out of the 128 documents analyzed, only 14% referred to an established conceptual framework for vulnerability assessment. Indeed, the conceptual framework of social vulnerability has remained narrow, even as our critical social lens is continually expanding. To fully understand and address the social vulnerability, we must know the source of all the factors contributing to social vulnerability. Identifying the source of social vulnerability helps to guide research towards meaningful findings and have broad implications.

A careful review of data from fieldwork in this research and data from other disaster research reveals that all the factors of social vulnerability have their source in Institutional Neglect. Some notable disasters in which Institutional Neglect played a significant role, and from

which this research draws context, include the 1995 Chicago heat wave (Klinenberg, 1999), the 2005 Hurricane Katrina (Brym, 2008), 1972-73 famine in the Sahel (Cant,1986), and the Fukushima nuclear accident. After prolonged research, I contend that the factors of social vulnerability are rooted in Institutional Neglect. Therefore, Institutional Neglect is the root cause of social vulnerability to the flood disaster in this research.

Although Institutional Neglect consistently played a dominant role in disasters, it has not been a focus of disaster research. Instead, it is generally referred to in passing, as "an act of man" (1972-73 famine in the Sahel) "institutional and social mechanisms" (1995 Chicago heat wave), "institutional mistakes" (2005 Hurricane Katrina), "a disaster Made in Japan" (2011 Fukushima Daiichi Nuclear disaster). The wide-reaching, endemic, and pervasive influence of Institutional Neglect in disasters demands that it be given critical attention and be developed as a framework to inform the development of disaster models better and enhance disaster practice.

A framework of Institutional Neglect states that beyond the factors that indicate social vulnerability are also the elements that produce those factors. It emphasizes that to understand and address social vulnerability to natural hazards fully, the institutional processes which undergird community vulnerability must first be identified, critically examined, and addressed appropriately. In a way, Institutional Neglect is a meta-analysis of social vulnerability. An essential step in the research is the development of both conceptual and analytical frameworks of Institutional Neglect, done in Chapter 3. While the social vulnerability approach is the broad approach that informs this research, the analytical framework of Institutional Neglect is deployed in Chapter 8 to determine how it functions to produce social vulnerability. The framework of Institutional Neglect helps to draw conclusions that have relevant implications for the research

and beyond. The framework of Institutional Neglect has broad applicability and is suitable for use in other vulnerability and disaster research.

## **Rationale and significance of research**

As flood emergencies in Nigeria have increased, resulting in severe consequences for both human populations and the environment, scholarly works have remained relatively small. Existing scholarly works and media accounts of the flooding events lack the depth and critical perspectives necessary for a robust understanding of the flooding events. While some studies have surfaced since this research began, they remain relatively few (Mayomi et al., 2013; Mngutyo and Ogwuche, 2013). These works often adopt the hazard/scientific approach to understanding disasters, which focuses narrowly on the physical aspects of the flood. In such studies, for example, living on risky zones, heavy rainfall, urbanization, deforestation, burning of fossil fuels, agricultural activities, and climate change are seen as the major causes of flooding (Mayomi et al., 2013; Mngutyo & Ogwuche, 2013; Ologunorisa, & Tersoo, 2006). This research contributes to the limited literature on flooding in Nigeria, especially on flooding in Benue State.

As noted in the preceding section, the research will facilitate a broader understanding of flooding and its impacts in Nigeria, particularly in Benue State, by employing the social vulnerability approach. The analysis and conclusions will help disaster practitioners to better plan and respond strategically to the challenges of the threats of flooding.

Additionally, the research contributes to new knowledge by broadening the scope of the social vulnerability approach to understanding disasters. It offers a perspective that reaches beyond existing conceptual frameworks to reveal the structural and institutional processes foundational to the production of social vulnerability. This work identifies Institutional Neglect as a source of social vulnerability. Institutional Neglect is the root cause of all the factors of



social vulnerability in this research, and in almost all other studies. Institutional neglect creates socioeconomic fragility and overall precarious livelihood expressed in widespread poverty, poor infrastructure, weak government, and endemic corruption, which are factors of social vulnerability. It relates to the failure of the equitable distribution of public goods, which consist of physical and social infrastructures intended for the development of persons, communities, or states.

Ultimately, disaster and vulnerability research aim to provide opportunities to learn and improve policy and practice. This research is no different. Understanding the complex nature of disasters, especially regarding the flooding disasters in Benue State, Nigeria, will increase knowledge and encourage good practices through well-informed mitigative measures and preparedness planning.

## **Purpose of the research**

The purpose of this research is to contribute new knowledge to the limited literature on flooding in Nigeria by drawing attention to the circumstances which expose an already vulnerable section of the Nigerian population to the risks of flooding, with a focus on Benue State.

To this end, the research:

- Reviews selected relevant literature that highlights the roles of social vulnerability and Institutional Neglect in organizing disasters.
- Determines the factors which influence social vulnerability to the flooding.
- Develops and operationalizes both conceptual and analytical frameworks of Institutional Neglect.
- Deploys the analytical framework of Institutional Neglect to demonstrate how social vulnerability is organized in the flood disaster.

- Draws relevant conclusions and demonstrates how the findings support the assumptions which frame the research.

## **Research Question and Hypotheses:**

The research raises a two-part question. How is social vulnerability as a function of institutional neglect, an outcome of socioeconomic fragility, and overall precarious livelihood, which creates exposure to the risks of flooding in Benue State, Nigeria? First, it is how the flooding resulted from social vulnerability, and the second is how social vulnerability was influenced by Institutional Neglect to create the conditions necessary for the flooding to occur. These steps are necessary to establish social vulnerability to the flood disaster and, at the same time, demonstrate how it originates. The following four hypotheses support the research question.

**Hypothesis 1:** Social vulnerability arises from events that have occurred in the past as well as ongoing political and socioeconomic circumstances of everyday living, often informed by institutional processes.

**Hypothesis 2:** Social vulnerability is inherently linked to Institutional Neglect. Institutional Neglect creates conditions of socioeconomic fragility and overall precarious livelihood, including poverty, lack of access to social, physical/structural and institutional resources, and factors which mutually reinforce one another.

**Hypothesis 3:** Viable institutions are crucial to building resilience to flood hazards because vulnerable people have little control over their circumstances and are largely dependent on the will or prerogative of government.

**Hypothesis 4:** Minimizing hazards and risks which threaten individuals is a critical sovereign responsibility; therefore, the government has a critical obligation to provide both

physical and social infrastructure, which protects people and helps them build resilience to the threats of hazard.

## **Overview of methodology**

As a case study, this research utilizes a qualitative methodology to respond to the research inquiry regarding the circumstances that make people vulnerable to the risks of flooding in Benue State. A crucial step in adopting the social vulnerability approach for this research is to develop a social morphology of the 2012 flooding. A social morphology provides an account of patterns and forms of socioeconomic, political, and institutional processes and structures and how they operate to influence the flood. This process helps to identify and establish the factors that may influence social vulnerability. Developing a social morphology involves linking a network of concepts and classifications to understand the underlying processes of a series of events and how they relate to one another, for which the qualitative method is very suitable. The qualitative method is suitable for assessing people's socioeconomic conditions and political circumstances, which is a significant task in this study. The qualitative approach is the most efficient method for handling the multiple sources from which the researcher collects data, including the administration of questionnaires, focus groups, individual interviews, and field observations (Patton, 2002; Yin, 2003: 8). These methods provide the opportunity to capture different firsthand accounts and emerging essential details, often left out by other approaches. Interviews and focus groups are particularly useful when seeking a complete response and are most likely to provide the depth of information that might be relevant. These methods are the best ways of resolving seemingly conflicting information because the researcher has the right opportunity to address apparent disparities in the responses. Finally, interviews and focus groups

are essential for revealing the significant emotional content that sheds more light on the words of respondents.

Data was gathered mostly through questionnaires. The sample comprised 205 men and women between the ages of 25 and 70, with 60 percent men and 40 percent women. Chapter 4, table 4.1, breaks down the sampling frame. Although primarily a qualitative work, this research uses simple descriptive statistical analysis such as charts and graphs to enhance understanding of the results.

## **Organization of Thesis**

### **Chapter 1: Introduction**

This chapter presents an overview of the research and introduces the assumptions that frame it. It presents the problem, purpose, and significance of the research and highlights the research's potential outcomes. It introduces Institutional Neglect as a new concept for understanding disaster vulnerability. It presents how the concept of Institutional neglect broadens the scope of disaster and vulnerability research and contribute to professional knowledge and practice in new ways. The chapter also presents the research question supported by four hypotheses. It provides a brief explanation of the methodological approach used to examine the research problem. Finally, it outlines the remaining structure and organization of the dissertation.

### **Chapter 2: A literature review**

This chapter provides a conceptual basis for the dissertation by reviewing and synthesizing a comprehensive selection of related bodies of literature. The stage for the development of conceptual and analytical frameworks for the research emerges in this chapter. The chapter helps to facilitate the development of the conceptual framework of Institutional Neglect by

highlighting in the literature review, the role of bureaucratic institutions in past disaster events. Highlighted in the review are four notable disasters that occurred within the last five decades beginning from the 1970s. These include the 2017 Grenfell Tower fire disaster in the UK, the 2005 Hurricane Katrina, the 1995 Chicago heat wave, and the Sahel famine in the 1970s. The patterns developed and conclusions drawn from the review will be used to support the development of new conceptual and analytical frameworks of Institutional Neglect in chapter 3. The frameworks will guide the research, analysis, and discussions. The review not only forges a logical framework for the research but also justifies the research by identifying and conceptualizing gaps in the literature. It demonstrates how the research will fill the gap and contribute to existing knowledge.

### **Chapter 3: Conceptual and analytical frameworks**

The conceptual and analytical frameworks for the research emerge in this chapter. A strong association between Institutional Neglect and social vulnerability emerged as the preliminary analysis unfold. After data from fieldwork and an extensive review of the literature revealed the significant role of Institutional Neglect in disaster, the development of the conceptual and analytical frameworks of Institutional Neglect became an indispensable orientating guide for the analysis. The first presents the definitions of 'institution' and 'neglect' and provides the context for their use in the research. The first part also presents a historical origin of Institutional Neglect in the field of science, in the 1940s, and its subsequent adoption in the child and adult protection system of the United States. It also develops and presents the operational and diagrammatic models of Institutional Neglect.

The second part of Chapter 3 presents the analytical framework of Institutional Neglect, a diagrammatic representation of Institutional Neglect and all identified factors, each accompanied

by brief explanations. The end of the chapter presents two additional analytical models utilized in the research, namely, the Hazards-of-Place model of vulnerability developed by Cutter (1996) and the progression of vulnerability by Wisner, Gaillard, and Kelman (2012:32).

#### **Chapter 4: Methodology**

This chapter discusses the methodology and accompanying procedures used to examine the underlying socioeconomic, institutional, political, and cultural factors of social vulnerability, to determine why and how people are vulnerable to the risks of flooding. It identifies the research as a case study that uses qualitative methodology. It outlines the various qualitative strategies and processes used to collect and analyze data, including interviews, focus groups, questionnaire administration, and personal observation. It restates the research question along with four hypotheses to help generate reliable data to determine the role of social vulnerability to flooding. It uses critical themes obtained from data coding to develop indicators of social vulnerability, used for analysis in later chapters. Other components of the chapter include ethical considerations, establishing positionality as an 'insider' researcher, and the physical, emotional, and material difficulties of fieldwork.

#### **Chapter 5: Results and findings**

The goal of this chapter is to determine and measure social vulnerability using data compiled in Chapter 4. This chapter seeks to establish if, indeed, the flooding was an outcome of social vulnerability or not. Measuring social vulnerability requires linking data from the research to existing literature, concepts, and other research to determine if it supports or contradicts data from these sources and establishes whether social vulnerability played a role in the 2012 flooding

in Benue State, Nigeria. It involves the development of the Social Vulnerability Index (SoVI). The construction of the Social Vulnerability Index (SoVI) requires data from the research.

While this research holds the position that the 2012 flooding resulted from social vulnerability influenced by Institutional Neglect, it also acknowledges, to a lesser extent, that physical vulnerability played some role in the disaster. The physical vulnerability arises from a combination of naturally occurring hazards such as flooding and human activity, which creates vulnerability to risks from natural hazards. Therefore, the chapter also provides an analysis of both the natural and human-made geographical settings that contribute to the physical vulnerability of the research locations. It adopts the hazard-of-place model (Cutter, 1996) to demonstrate how social and physical vulnerabilities interact to produce a place's vulnerability.

The chapter consists of two sections. Section 1 presents the assessment of social vulnerability and section 2 addresses the physical features (natural hazards) and the human activities (human-made risks), which contribute to the physical vulnerability of the research locations.

## **Chapter 6: The organization of social vulnerability in the 2012 flooding**

The research argument is two-fold. First, it is that social vulnerability influenced the 2012 flood in Benue State, Nigeria. The other is that that social vulnerability to the flooding event was a function of Institutional Neglect. This chapter addresses the first part of the argument and demonstrates how social vulnerability in the flooding evolved. It discusses and synthesizes the results and findings in Chapter 5 as they relate to the objectives of the research, the research questions, literature review, and conceptual framework. The discussions include a systematic search for rival explanations and arguments to establish credibility while highlighting and reinforcing patterns that support existing assumptions in the research.

## **Chapter 7: The 2012 Flooding in Benue: Profiling Institutional Neglect**

This chapter focuses on the second and most critical part of the research argument. It demonstrates how Institutional Neglect organizes social vulnerability through government failure to equitably distribute public goods, helping to build resilience to the threats of flooding. The chapter undertakes a systematic analysis using the factors of Institutional Neglect identified and operationalized in Chapter 3. It comes full circle to establish how Institutional Neglect was at the root of social vulnerability to the 2012 flooding in Benue State.

## **Chapter 8: Conclusions and postscript**

The chapter provides conclusions drawn from the research. It provides a summary of the research assumptions, questions, and findings. Based on the integration of the research findings, analysis, interpretation, and synthesis. Most importantly, the chapter demonstrates the usefulness of the Institutional Neglect framework, generally for vulnerability research and specifically for this research. The chapter shows that the concept of Institutional Neglect is invaluable for analyzing disasters in how it provides broader context which optimizes clarity. The chapter concludes with restating the research limitations and discusses the transferability of the findings to more general populations and other settings and conditions.

It reiterates the usefulness of the Institutional Neglect framework, generally for vulnerability research and specifically for this research. The chapter links neglect with the failure of development and opine that with Nigeria's abundance of both human and natural resources, she can still lift her citizens out of abject poverty and make them resilient to the threats of natural hazards.



The chapter provides a set of recommendations. The recommendations have practical implications for policy and practice, as well as for further research. The chapter ends with reflections on the contributions which the research makes to knowledge and practice in the field of disaster and vulnerability research.

The postscript recognizes the immense benefits of the research and the satisfaction derived from engaging in the exercise and expresses hope in Nigeria's ability to rebuild a society that is resilient to the threats of natural hazards.

# Chapter 2

## Literature Review

### Introduction

This chapter provides a conceptual basis for the dissertation by reviewing and synthesizing a selection of appropriate related bodies of literature. The review provides a logical impetus for the research by conceptualizing a gap in the literature and serving as a foundation for the development of an emerging framework that fills the gap and contributes to existing knowledge. This is the Institutional Neglect framework.

The chapter has two sections. Section one considers the intellectual progression of disaster research, beginning from the early 60s and presents the important debates that have occurred since then. Three dominant concepts of disaster presented in this section include disaster as an 'act of God,' 'disaster as purely physical agent' or 'act of nature' and disaster as 'social vulnerability.' This section is crucial because it provides historical perspectives and valuable insight into the progression of disaster research and disaster management. Since the social vulnerability approach is the overarching perspective that frames this study, attention is devoted to its emergence as a concept for understanding vulnerability to natural hazards, including its benefits and challenges.

The second section reviews the literature on selected disasters to highlight the critical role that state bureaucratic institutions play in organizing disasters and the importance of this role in understanding social vulnerability to the threat of natural hazards. Both a conceptual concept and an analytical concept of Institutional Neglect, which will guide the research, are fully developed in chapter 3. The section highlights four notable disasters that occurred within the last four decades, beginning in the 1970s. These include the 2017 Grenfell Tower fire disaster in the UK,

the 2005 Hurricane Katrina, the 1995 Chicago heat wave, and the Sahel famine in the 1970s. The disasters were selected not only for their unique individual characteristics, which highlight the different institutional settings in which Institutional Neglect can occur, but also their historical organization across time and space. The patterns developed, and conclusions drawn from this section are used to support the development of new conceptual and analytical frameworks in chapter 3.

### **Intellectual progression of disaster research**

#### **Précis of formal disaster research**

Disaster research for a long time was, in many respects, rooted in the natural sciences. Disaster research and management and the discipline's epistemological tradition are all rooted in the natural sciences. Instrumental rationality intensifies this externalization. Instrumental rationality divides external materiality from the inner human world. It advances scientific knowledge claiming to provide an objective view of our physical world, along with the capacity to impose some order on its chaos. Therefore, early disaster research was defined by a scientific, physical approach. The approach was strongly contested and challenged later on by a pragmatic concept that views disaster within the context of human social behavior and emphasizes the protagonist's role that humans play in organizing disasters. Therefore, two broad quasi-discrete discourses or approaches define disaster research. First is the scientific/hazard/physicalist approach. The other is the radical critical response, the social vulnerability approach (Homan 2003:52; Rosenthal 1998:148 -149). Historically, however, ideas about disasters have gone through three critical phases (Gilbert 1998, 11 – 18; Ferudi 2007:483; Vacano & Zaumseil 2014:7). They include conceptualizing disaster as an 'act of God', disaster as a 'purely physical agent' or 'act of nature' and disaster as 'social vulnerability.' While this section considers the three

significant conceptualizations of disaster, formal disaster research recognizes only the scientific/hazard and the social vulnerability approach. Disaster as an Act of God is a simple (informal) concept that has no root in disaster research. However, because it is a worldview that has informed people's understanding of disasters for all time, it is included in the discussion here.

### **Disaster as Act of God**

The traditional and earliest known conceptualization of disasters attributed them to the supernatural. Disasters were characterized as Acts of God and believed to be influenced by the unfavorable alignment of the stars and planets and invariably as 'acts of God.' Act of God was a notion of divine retribution for human misdeeds and failings. In pre-modern times and before the advent of science and technology, people had neither knowledge nor understanding of the internal processes of the earth, which are fundamental to forming the landscape and causing potentially hazardous earth processes, such as earthquakes and volcanic eruptions. To make sense of the world and the processes occurring within, most people at that time depended on their worldviews (Weltanschauung), often derived from cultural and religious beliefs and values (Scandlyn et al., 2009:43). The belief was that catastrophic events indicated some disturbance between earthly and heavenly spheres. Viewed as punishments are the injury, death, destruction, and disruption resulting from catastrophic events. Disasters fulfilled the divine, and sometimes unknown, purposes of a supernatural being according to this worldview. In such instances, "repentance or human sacrifice was accordingly regarded as the means to appeasing religious deities" (McEntire 2001:3). For example, in the first millennium BC, during the Zhou Dynasty, the Chinese belief was that wise and virtuous leaders were mandated from heaven to rule. Only heaven can remove this mandate if the leaders are evil or corrupt. This belief became incorporated into the Taoist view, which holds that through natural disasters such as floods,

plagues, or earthquakes, heaven expresses its disapproval of evil rulers (Yeats (2000:193). Gregory Smith (2012:42) writes about an earthquake myth in Japan in which associated a giant subterranean catfish with the flow of divine power whose movements can shake the earth's surface to cause earthquakes. As late as the nineteenth century, the giant catfish (namažu) myth remained a widely known symbol of earthquakes throughout Japan and even revived after the 21st century Great East Japan Earthquake of 2011 (Smith, 2012:42). Greek and Roman mythologies of Western and Eastern societies also associate disasters with the perspicacity of a divine or Supreme Being. A significant concern with this view of disaster as an "act of God" is the "implication that nothing could be done about their occurrence." This has an implication for disaster management (Quarantelli 2001:3). It is a "fatalistic syndrome whereby individuals feel no personal responsibility for hazard response and wish to avoid expenditure on risk reduction" (Smith 1996:70; UNISDR 2002:3).

The Lisbon earthquake of 1755 captures what early disaster researchers consider the earliest paradigm shift in disaster studies (Dynes, 1998:3 - 6). Dynes (1998:24) refers to an earthquake as "the first modern urban disaster." Dynes (1998:28) provides a historical account of how the Marques de Pombal, who took charge of the emergency response and reconstruction after the Lisbon earthquake, using his political skill to undermine the traditional belief that the earthquake was a signal of God's displeasure. He writes that "where earthquakes traditionally had been interpreted as a dramatic means of communication between gods and humans," this earthquake was the first modern disaster in which the state accepted the responsibility for mobilizing emergency response and for developing and implementing a collective effort for reconstruction. Amongst Pombal's concerns was that the call for devotional repentance, as usual, might lead to the personal withdrawal of people from civic engagement, at a time when the city needed

everyone to participate in the reconstruction. Pombal feared that religious beliefs and practices might inhibit or delay the reconstruction process, and so he opposed the traditional notions of supernatural causation (Dynes 1998:15 - 16). According to Stallings (2006:223), to take primary responsibility for response, recovery, and rebuilding, the government wrested power from the Church. This action by the government created a void that would later open the way for a naturalistic explanation of disasters to rival the prevailing belief that they were Acts of God.

In time, the rise of Enlightenment secularism led to an essential shift from the way society conceptualized disasters as Acts of God. People began to alter their perception of disaster as science became the new source of knowledge, and they increasingly began to see disasters as Acts of Nature. Over time nature was increasingly substituted for the supernatural, and the concept of the natural disaster was born (Quarantelli, 1987:8). By the early 20th century, disasters were not thought of as 'acts of God' but almost exclusively as 'physical agents' or 'acts of nature.'

### **Disaster as an Act of Nature or Physical Agent**

The Enlightenment era and the consequent impact of science viz-a-viz reason witnessed the emergence of the concept of disaster as a physical agent or act of nature. Here, 'the violent forces of nature' or 'nature on the rampage' are to blame (Wisner et al., 2004:10). It also legitimizes the Christian informed "man vs. nature" vision of the environment. It establishes a dichotomy between civilization and "wild, savage" nature. The purpose of man is to dominate and defy nature, and where nature conceived as a wild, irrational force, needs control to serve the needs of man. Where the supernatural was once responsible for unleashing disastrous events in pre-modern times, with the advent of the Enlightenment and the expansion of scientific inquiry, the

untamed nature became the main culprit. Nature, the physical world alone, was the source of disasters.

This scientific/hazard approach was hazard-focused, to the extent that disaster and hazard became viewed as synonymous. Hazards precipitate disasters and disasters are the outcomes of hazard events such as flooding, earthquake, etc. It is the impact of a hazard event that involves extensive economic losses or loss of human lives that constitute a disaster. However, since the cause of disasters was believed to be natural, human beings could only intervene in that natural process by applying scientific knowledge to the hazard events in terms of prediction, warning, and preparedness. Experts could only provide knowledge and organize the process of preparedness, but beyond that, could do nothing else.

Furthermore, the early history of the emergence of the hazard approach corresponds with the establishment of civil defense institutions as much more concern and attention shifted to the possibility of nuclear attack rather than natural hazards. McEnaney (1980:1 - 10) writes that at the end of the Cold War and in the wake of a Soviet Union detonation of an atomic bomb, a growing concern about what would happen in the aftermath of a nuclear attack or disaster emerged. To allay this concern Truman, the US president at the time, created the Federal Civil Defense Administration and charged it with the responsibility of protecting Americans from the "physical and psychic ravages of nuclear war." Combining science, technology, and entrepreneurial spirit, the US Federal Civil Defense Administration developed specific measures. The agency promoted an ideology of war that made it difficult for the agency at the end of the century, to separate itself from the military frameworks when imagining a new, post-Cold War order. A close look at the hazard paradigm shows that it classifies, explains, and responds to disasters as if they were entirely or primarily a function of the agent or enemy that strikes a vulnerable

community or society (Gilbert, 1995:232). The popularity of this approach rests on its simplicity, clarity, and appeal to common sense. Disaster practitioners and professionals were eager to adopt the concept of disaster as an agent because it was relatable to both arms and enemies. For example, according to Gilbert (1998:12), the idea of bombs dropping on people fit the notion of an external agent attack, in the same way, that flood or earthquake harmed people. This view of disasters became hegemonic or 'mainstream' and accepted as the traditional view. Researchers were unable to find other tools to explain disaster in a manner that made it immediately intelligible to everyone in the same way that the war format did. The pervasiveness of the hazard paradigm in Western thought, according to Hewitt (1998:78), is responsible for its robustness in mainstream disaster studies.

Like its predecessor, however, the hazard paradigm failed to address the complex nature of disasters adequately. Critiques point out that the paradigm obliges one to reason in terms of war, aggression, and defense. War at the time was the most significant risk or source of disaster, and military defense and research, seen as the solution. Hewitt (1998:81) notes that the paradigm reflects the overriding commitment of modern states to military security. It rendered the social understanding of disaster (which this research emphasizes) secondary, if not impossible, "by placing the sources of risk literally outside society, in the environment or some assumed unexpected forces" (Hewitt, 1998:78). Critiques further argue that this narrative separates the physical environment from the human social environment. Separating the physical environment from the human social environment promotes an adversarial view of the relations between environment and society that portray people as passive bystanders or victims of natural agents. Professional and mission-oriented agencies who aid affected communities are viewed as sources of knowledge and solution and are looked upon to exercise their technical expertise to confront



and tame nature, predict extreme events, and provide the advice necessary to protect society. This paradigm offers and applies technologically driven solutions to environmental problems. Environmentalists have long argued that the 'taming of nature,' which is a considerable element of this approach, was at the core of the exploitation and bastardization of the natural environment for capitalist gains. Making nature the culprit obliterates the causal link to the producers of disasters and assigns no responsibility for the excess burden on the poor that disasters often impose. Furthermore, the hazard paradigm sets precedence for the neglect of causal factors. It ignores underlying or pre-existing conditions in which disasters occur and downplays the role of humans in creating or contributing to all types of catastrophic events (McEntire, 2001:189).

As time went on, researchers began to ask whether the causes of environmental harm might be non-random. The view that disasters are caused by 'acts of nature' or natural agents began to be gradually displaced by the idea that they resulted from the 'Acts of men and women' (Quarantelli 2001, 4). By the 1970s and 80s, a wide range of studies demonstrating the critical relevance of social conditions and how their effects contribute to organize disasters became predominant in disaster research. Therefore, in the aftermath of the Great 2004 Tsunami, the rumor that it was not 'natural' but caused by nuclear testing readily found an audience skeptical of the official version of events that it was merely a natural hazard event (Ferudi, 2007:283). Today, the finger of blame often points towards another human being in the aftermath of a disaster. Government officials, big business, or careless operatives are held responsible for most disasters (Ferudi, 2007:483).

### **Disaster as Social vulnerability**

The concept of "vulnerability" in hazard and disaster research dispels the misconceptions and biases that earlier dominated these fields, some of which the preceding sections presented.

Vulnerability as a concept in disaster research emerged in the 1970s and 80s out of the social sciences. Its introduction is a response to the purely hazard-oriented perception of disaster in which early disaster research was deeply rooted (Birkmann, 2006:11, Schneiderbauer and Ehrlich, 2004:13). Oris et al. (2016) write that the term "vulnerability" was almost nonexistent in the academic literature until the mid-1980s. Vulnerability gained a marginal presence in the 1990s, and then had an explosion in usage from the 2000s onwards. Since then, it has continued to grow in usage. Today, vulnerability is considered a scientific term or topic in many disciplines.

Vulnerability is necessarily a multi-dimensional concept that considers economic, social, political, ecological, and environmental indicators. It focuses on the susceptibility of people and communities and their abilities to cope with the damage that could occur (Hilhorst & Bankoff, 2004:2). It is an approach that seeks to understand disaster as an intersection of social, economic, political, and historical factors and explains disaster on structural and contextual grounds and as a process tied to social vulnerability.

Vulnerability refers generally to the possibility of being harmed by certain kinds of risks. People's vulnerabilities are related to limitations in their physical assets (buildings, furnishings, vehicles) and psychological (knowledge, skills, and abilities), social (community integration), economic (financial savings), political (public policy influence), and resources (Lindell, 2013:4). Vulnerability is a strong disposition to be affected by, or susceptibility to damage (Cardona, 2004:37 -51). What drives vulnerability are precarious livelihoods, the degree of self-protection or social protection, qualifications, and institutional settings which frame the experiences and responses of a person or community in the event of a disaster (Wisner et al., 2004:5).

The International Strategy for Disaster Reduction (UN/ISDR) defines vulnerability as the conditions determined by physical, social, economic, and factors or processes that increase the susceptibility of a community to the impact of hazards (UN/ISDR, 2004).

*Figure 3 Risk-Hazard (RH) model of vulnerability*

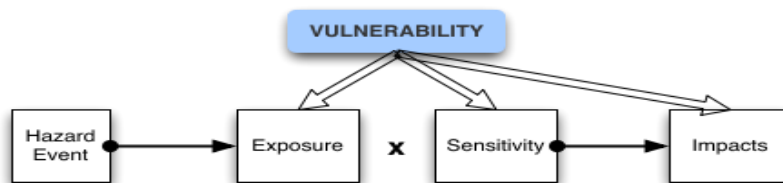
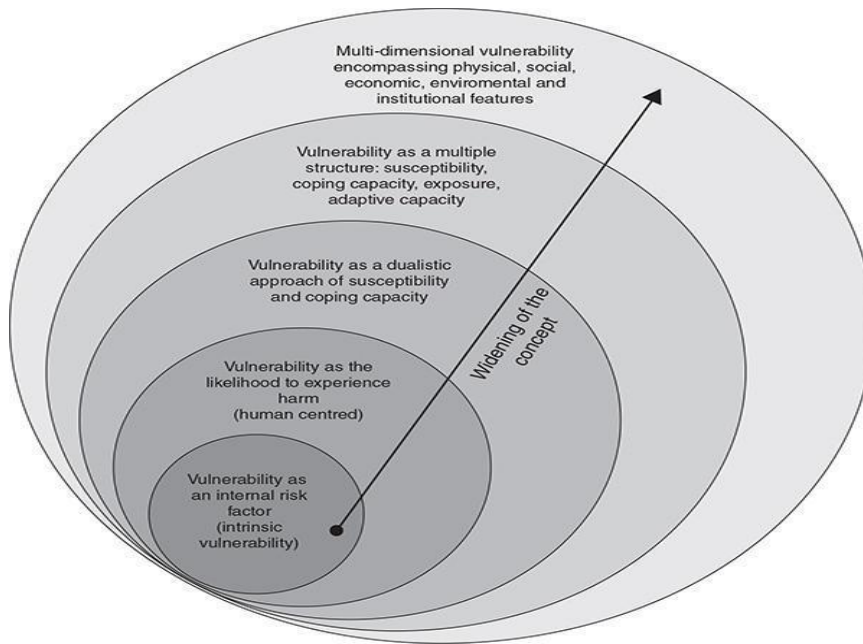


Figure 3 is a Risk-Hazard (RH) model showing the impact of a hazard as a function of exposure and sensitivity. The chain sequence begins with the hazard; noted implicitly, is the concept of vulnerability, as represented by white arrows (adapted from Turner et al., 2003).

Birkmann and Wisner (2006) and Birkmann (2013) suggest that vulnerability can be conceptualized at a series of increased degrees of complexity and scale, as represented in Figure 4 below. Vulnerability, as discussed in this research, falls under the outermost two rings in the diagram.

*Figure 4 Scale and complexity of vulnerability concepts.*



Source: Birkmann, 2013:39

Since there are many views through which human experiences filter, it is not surprising that the topography of the concept of vulnerability has roots in various disciplines and sub-disciplines, professions, and applied sciences. The typologies have two broad streams: the problem-focused stream, which often utilizes a quantitative approach to understanding vulnerability. Examples of this stream are the medical and health sciences, which use different metrics to measure the risks of humans suffering from harm (Kane & Radosevich, 2010). The other stream is that which seeks to understand vulnerability from a qualitative perspective. This stream includes disciplines such as social work, sociology, and psychology (Roberts & Ashley, 2008; Dominelli, 2012; Wisner & Kelman, 2015); development studies (Bankoff, Frerks, & Hilhorst, 2004; Pelling, Maskrey, Ruiz, & Hall, 2004; Varley, 1995), disaster and humanitarian studies (Hewitt, 1997; Wisner, Blaikie, Cannon, & Davis, 2004; Alexander, 2000; Wisner, Gaillard, & Kelman, 2012). Besides, there is also the studies of information systems

vulnerability, business continuity following extreme natural events and other disruptions, reports on the financial vulnerability of businesses under average, day to day conditions (Verhezen, 2015); Anton, Anderson, Mesic, & Scheiern, 2003; IIBHS, 2011; ADVISEN, 2013; climate science (Brooks, 2003; Pelling, 2010; Preston, Yuen, & Westaway, 2011); and public health and food security studies (Kovats, Ebi, & Menne, 2003; Luna, 2014; WHO, 2015). All these disciplines and many others have different ways of defining, measuring, and assessing vulnerability.

Scholars, professionals, and practitioners concerned with identifying people, groups, and systems at risk and with how to formulate solutions that alleviate such concerns might use vulnerability to describe such conditions, particularly when adopting systems theory approach. The systems approach to vulnerability is a dominant feature of interdisciplinary studies of global environmental change (Adger, 2006; Eakin & Luers, 2006; Janssen & Ostrom, 2006; Turner et al., 2003). Ecologists and engineers also take a systems approach. Political scientists and economists use the vulnerability approach to assess the stability of a system when the system faces unanticipated shocks and changes (Bieri, 2000; Coetzee & Dewald, 2012; Foster & Josephson, 1997; Timmerman, 1981). The UN uses an economic vulnerability index as one criterion for classifying a country as "least developed." For a time, the UN published a "world economic vulnerability monitor," which monitors and analyses global economic trends and prospects and their implications for the implementation of the 2030 Agenda (Wisner, 2016:2).

The vulnerability trend gained quick popularity in the area of disaster research as it became evident that the exposure of people and how they experience damage, injury, and hardship as a result of natural events depends on differences in the quality of built structures and on social and economic differences.

In the 1970s and 1980s, research on the hazard perception paradigm was conducted by graduate students in some low-income, non-Western countries, specifically in the global south, including Tanzania, Nigeria, and Southeast Asia (Indonesia) (Wisner, 2016:6). Results from fieldwork produced evidence that poor governance, corruption, skewed access to resources (land, water) were instrumental in producing disasters. The evidence from the research showed that the governments or officials in these countries failed to equitably allocate resources, which could aid in preparing for and responding to the challenges of natural hazards. Instead, funds meant for addressing disaster-related concerns, often diverted to unrelated concerns or personal coffers. The lack of investment in infrastructure and social services had more impact in turning a natural phenomenon such as drought, flood, or coastal storm into a disaster, than did either faulty risk perception, lack of proper policy on natural hazards, or, lack of sound engineering. Furthermore, the research showed that natural phenomenon did not necessarily lead to disastrous outcomes. Instead, social, economic, and political conditions were required to turn the hazards into a disaster (Wisner, 2016; Sen, 1981)

The new element of this approach was that the source of disorder was not some outside force of god or nature, but that the source existed in society (Tierney, Lindell, Perry, 2001:16-17; Cutter, 2003:244). Therefore, the analysis of disaster began to consider probable social elements that could inform the context of a disaster event- elements such as power, inequality, political economy, marginalization, colonialism, and much more.

### **Social vulnerability approach**

Disaster sociologists distinguish between physical vulnerability and social vulnerability, which have different but overlapping causes and consequences. Physical vulnerability generally concerns geographical locations and, by nature, is associated with the scientific/hazard approach.

On the other hand, the term social vulnerability defines the susceptibility of social groups to potential losses from hazard events or society's resistance and resilience to hazards (Hewitt, 1998; Cutter et al., 2000, 716). It refers to pre-existing conditions, rooted in social inequalities that impede the resilience of potential victims to escape, survive, and recover from catastrophic events (Cutter, Boruff & Shirley, 2003:243). These conditions include race, class, gender, age, disability, health, status, and other social factors that influence or shape the susceptibility of various groups to harm. The conditions also govern their ability to respond to the threats of natural hazards. Physical and social vulnerability intersect in complex ways and can exist at the individual, household, or community level (Gould, 2015:233).

Social vulnerability is a perspective of vulnerability that examines social factors to determine how they influence disasters, and the perspective provides essential insights for understanding differential impacts and consequences for societies exposed to disasters (Ryner, 2013:2). The social vulnerability approach, according to Quarantelli (1998:266), results from improved empirical data, critical theoretical contributions from some European researchers, and a coincident shift in the sociological subfield of collective behavior and social movements in the 1960s. Scandlyn et al. (2009:34 - 35) attributes the emergence of the approach to several social movements that emerged in the 1960s and 1970s, which stimulated emergency managers, social scientists, and those affected by disasters and hazards to question the assumptions of disasters as only natural events. These movements include the Civil Rights Movement, the emerging Environmental Movement, and the War on Poverty. The emergence of a global consensus led by the United Nations in the International Decade for Natural Disasters Reduction, also aided in bringing the approach to the limelight (Enarson, 2007:259).

A conceptual framework of vulnerability reminds us that though natural hazards may be physical processes, "disasters are quintessentially historical ones, that is, they are the outcome of processes that change over time and whose geneses lie in the past" (Bankoff, 2007:110).

Similarly, Ali (2002:145) argues that disasters and where they occur, are linked to risks that have accumulated over time as a result of political and economic forces. He notes that:

the adoption of a "processual" model, that is, one that considers the complex interactions between local historical circumstances, broader social and political-economic forces... will help shed some light on the actual mechanisms that make certain places more vulnerable to disasters.

Carr was the first in the field to try to understand disasters in terms of social action. Carr's conclusion signifies that disasters are the result of human activities, not natural or supernatural forces "deductively, mankind is responsible for the consequences of his actions as well as of his omissions" (Dombrowski, 1998:24). Although historical and literary accounts of the 1755 Lisbon earthquake date back thousands of years, Jean-Jacques Rousseau's analysis of the disaster in *The First and Second Discourses* provides the first social scientific insights into the disaster (Dynes, 2000:97). Among other things, Rousseau observes that the scale and severity of the earthquake was a result of population density and argues that prompt evacuation at the onset of the initial tremors would have lessened the impact. While the social vulnerability approach has seen immense popularity in the social sciences since its emergence, it is not without challenges. The following section considers some of the criticisms of the concept and the responses to them.

### **Multiplicity of meaning**

Every field of study has its lens on the world and its toolkit for interpreting concepts and observations across various knowledge areas and traditions. As such, the term vulnerability is context specific. However, as with many socially constructed theories with multidisciplinary origins, the concept of vulnerability struggles for a common definition. Current literature on



vulnerability encompasses more than 25 different definitions, concepts and methods to systematize vulnerability (Luers, 2005:215; Cardona, 2004:37; Wisner et al., 2004,:11; Green, 2004:323; van Dillen, 2004:9; UN/ISDR, 2004:16; Pelling, 2003:5; Turner et al., 2003:8074; UN-Habitat, 2003:151). In disciplines such as anthropology, climate studies, demography, development studies, disaster management, economics, environmental science/studies, health research, psychology, security studies, and sociology, vulnerability produces considerable conceptual and terminological diversity. The challenges that arise with conceptual and terminological diversity make vulnerability an ambiguous term that requires thorough specification when used as an analytical approach (Alwang et al. 2001; Bergstrand et al. 2015). Cutter (1996:531 - 532) provides 18 different definitions of vulnerability, which vary from the degree to which natural events differentially impact different classes of society to vulnerability as a function of costs and benefits of living in prone to natural hazards. Critiques point out that these differences in conceptualizations and terminological uses create confusion. They create confusion about what "vulnerability" stands for as a social scientific concept (Bogardi & Birkmann, 2004:76). Birkmann (2013:16) writes that the concept of vulnerability remains "somewhat fuzzy and often used with differing connotations" such that it might be misleading to establish a universal definition in that context. The challenge of developing a balanced approach lies in the ability to combine the general context, including the macro indicators and more precise and specific indicators (Birkmann, 2013:16).

While some express concern about the multiplicity of the meaning of vulnerability, others argue that a term with multidisciplinary origin does have significant advantages. For example, an interdisciplinary term has a high level of familiarity, attracts curiosity, and enjoys broader recognition and understanding. Spini et al. (2013) note that interdisciplinary terms have a wider

audience as the insights they elicit runs across disciplines. For example, vulnerability is a core concept of Institutional Neglect as it pertains to the threats of natural hazards in disaster research and child and elder mistreatment in social work. Also, using an interdisciplinary term or concepts forces researchers to be aware of their limitations and be better positioned to make a more compelling case to larger, possibly skeptical audiences. Finally, utilizing a term with interdisciplinary meaning responds to the hyper-specialization taking over many academic quarters.

Across the board, vulnerability represents the same basic concepts or, more specifically, ideas. It denotes weakness in position, place, or thing. It is only in the context of its use that specific meaning is derived. In the area of human and environmental relationships, particularly concerning susceptibility to disasters, it commonly means exposure to the threats of hazard and creates no conflict as a term. In this research, its use is in the context of exposure to the threats of natural hazards. It establishes the absence of resilience.

### **Exclusive economic focus**

The strength of the social vulnerability approach lies in its socioeconomic emphasis at the microstructural level. This emphasis, critiques argue, tends to move towards economic reductionism, which becomes increasingly apparent as social relations are frequently characterized in terms of economic relationships (von Vacano & Zaumseil, 2014:11). The exclusive economic focus critiques further argue, build on environmental determinism. It cannot explain the root causes of the factors of social vulnerability or how people get to or from prevalent conditions such as poverty to very particular vulnerabilities that link to the actual hazards which threaten them.

The critiques do not deny the influence of poverty in creating vulnerability to the threats of natural hazards. It only demands a broadening of the social vulnerability approach to include the processes that produce poverty. Cutter et al., (2003:243), find that the concept of social vulnerability already refers to more than socioeconomic impacts, encompassing features of potential physical damage in the built environment. She constructed the hazard-of-place model of vulnerability, which considers both the social and physical fabrics of a place. Indeed, a community's social fabric, including its ability to cope with, recover from, respond and adapt to hazards are influenced not only by socioeconomic and political factors but also by geographic filters such as the location, the situation of the place, and proximity to the source of hazard which often moderate or enhance the potential for hazard.

This research broadens the social vulnerability approach by identifying institutional processes linked to the social vulnerability factors in the flood events. The research utilizes the hazard-of-place concept of vulnerability to incorporate the physical properties of the flooding (Cutter, 2003, Heinz Center for Science, Economics, and the environment, 2002; Cutter, Mitchell, and Scott, 2000; Cutter, 1996). Other studies that have integrated biophysical and social vulnerability in the analysis of disasters include studies on the causes and consequences of land degradation (Blaikie & Brookfield, 1987), drought (Wilhite & Easterling 1987; Liverman, 1990), and severe environmental degradation in selected world regions (Kasperson et al. 1995).

### **Problematic origins and representation**

The origins of the concept of vulnerability, as well as its manner of representing peoples, have been deemed to be problematic and a matter of concern across disciplines. Bankoff (2003:29) writes that the discourse on vulnerability belongs to a knowledge system that emerged out of the dominant Western liberal consciousness. It reflects the principles of a culture that

regards the world as a place, which is increasingly out of control and dangerous. Like many ideas originating from hegemonic Western liberal thought, it makes faulty assumptions about non-Western societies. It labels large sections of the globe, such as Southeast Asia, Africa, as underdeveloped, dangerous, and universally afflicted with disease, poverty, and disaster. The inhabitants of these regions, perceived as inferior and uneducated victims need Western medicine, investment, preventative systems, and especially Western expertise to cope with these conditions. It recasts the social pathologies derived from poverty and underdevelopment, which systematically stigmatizes cross-sections of communities and regions.

Similarly, Ferudi (2007:487), argues that vulnerability is a problematic term that does not reflect the experiences of communities confronting adversity; instead, it is term professionals, and practitioners use to characterize or label communities. Heijmans (2001:15) finds that vulnerability to disasters is a matter of perception. In the perceptions of most aid agencies, local people are 'lacking' in views. Therefore, the agencies tend to think for the victims, not realizing that disaster-prone communities might interpret their circumstances differently. Individuals, the public, and communities are represented as weak, lack agency (Hewitt, 1998:83). The political vulnerability approach, where applicable, encompasses both victimhood and responsibility, also leads to stigmatization.

While representation has, indeed, been problematic across disciplines, there has been a significant response to the concern. A good amount of work has gone into exposing and addressing problematic representation and stigmatization, especially of minority groups in research. Feminist scholarship has blazed the trail in this regard. As time has passed, there have been calls across fields and disciplines for research protocols and ethics to be more sensitive to the needs of research subjects and to protect them from undue exploitation. Such calls have led

to the strengthening of research ethics in ways that force discussion of methodology and raise essential questions on the personal, professional, and political continuum, particularly in qualitative research. At the Faculty of Graduate Studies, York University, Human Participants Research Protocol is stringent and rigorously executed. This research was subject to stringent ethics review. Indeed, while there is a lot more to do with regards to representation, significant strides have been made to check the misrepresentation of research subjects by researchers.

### **Institutional organization of disasters**

This section reviews some prominent disasters, paying attention to the workings of institutions, and highlighting their roles in the various disaster events. The review looks at how pre-existing and underlying social conditions contribute to organizing disasters. Institutions and their operatives in this research refer to governments' bureaucratic agencies and individuals who work in them.

#### **The 2017 Grenfell Fire**

On Jun 14, 2017, a fire erupted in Grenfell Tower in the Royal Borough of Kensington and Chelsea (RBKC)<sup>2</sup> In west London, in the UK. Grenfell Tower and the Lancaster West Estate sit in the north of Kensington and Chelsea. A more substantial part of this area is devoted to social housing and home to a predominantly lower and modest income, working-class. Many of them are black and minority ethnic people, some of whom are migrants (Alibhai-Brown, 2017; Madden, 2017; Obordo, 2017; Watt, 2017). The fire caused 72 deaths. It injured more than 70 people, while 223 people escaped. It was the worst UK residential fire since the Second World

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<sup>2</sup> Thirty-two local authority districts and the Royal Borough of Kensington make up the Greater London county and Chelsea (RBKC) is one of them.

War was, and since the 1988 Piper Alpha disaster, the deadliest structural fire in the United Kingdom (Brokenshire, 2018).

Following the tower fire, there was significant public outrage over perceived negligence by the management company KCTMO.<sup>3</sup> Kensington and Chelsea Council<sup>4</sup> were also heavily criticized, especially for handling the aftermath of the tragedy. What was troubling was that the catastrophe occurred in the country's wealthiest borough. Added to the shock were the circumstances surrounding the disaster, which raised questions about political and corporate responsibility.

An independent report commissioned by the KCTMO, in 2005, was highly critical of the body responsible for managing Grenfell Tower. The report highlighted the negligent approach to residents' safety. It criticized the KCTMO and the contractor for "inadequate management." These include the building's fire escape lighting (two-thirds of the tower's emergency lighting units failed a routine inspection), "inadequate installation standards," "failure to acknowledge the importance of undertaking urgent remedial works" and a "lack of communication" between the block's management and residents. (Gentleman, 2017).<sup>5</sup>

Investigations revealed that residents of Grenfell Tower had expressed significant safety concerns before the fire. The Grenfell Action Group (GAG), which was established by residents in 2010, to advocate on their behalf, ran a blog highlighting the many safety problems which

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<sup>3</sup> Kensington. Chelsea TMO (KCTMO) was the largest tenant management organization (TMO) in England, managing nearly 10,000 properties on behalf of Kensington and Chelsea London Borough Council, which in the Royal Borough of Kensington and Chelsea, represents the entire council housing stock.

<sup>4</sup> London borough council which governs the Royal Borough of Kensington and Chelsea

<sup>5</sup> <https://www.theguardian.com/uk-news/2017/nov/01/grenfell-report-criticised-inadequate-management-12-years-before-fire>

tenants faced. It criticized the council and KCTMO for neglecting fire safety and building maintenance. Twelve years earlier, GAG published a report which criticized the emergency lighting. The report noted, among other things, that for up to four years, there was no inspection of firefighting equipment at the tower; on-site fire extinguishers had expired, and others, because they were so old, had the word "condemned" written on them. GAG alerted the council's cabinet member for Housing and Property and documented all the attempts it made to contact KCTMO management but never received any response (Wahlquist, 2017). In 2013, a TMO Health and Safety Officer published a fire risk assessment, which recorded concerns about safety. The building had one entrance and one exit, and the corridors filled with garbage, In January 2016, GAG warned that a fire would trap people in the building. GAG published an online article about KCTMO in November 2016, accusing the council of ignoring health and safety laws.

As part of a statement in 2016 that drew attention to the plight of the residents, GAG declared that the sordid collusion between the RBKC and KCTMO was a recipe for a future major disaster (GAG, 2016). According to GAG, only a catastrophic event would expose the ineptitude and incompetence of KCTMO. It predicted that "it will not be long before the words of this blog come back to haunt the KCTMO management for ignoring their responsibility to ensure the health and safety of their tenants and leaseholders!" (GAG, 2016).<sup>6</sup> Another group that raised concerns about the building was the Grenfell Tower Leaseholders' Association, who complained about exposed gas pipes in the months before the fire (Booth, Gentleman, & Khalili, 2017).

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<sup>6</sup> <https://grenfellactiongroup.wordpress.com/2016/11/20/kctmo-playing-with-fire/>

Furthermore, an independent assessor had highlighted 40 severe violations with fire safety at Grenfell Tower in June 2016. The independent assessor recommended action taken as soon as possible. In October, the assessor asked why the KCTMO had not addressed the more than 20 violations raised. In November 2016, the KCTMO was served a fire deficiency notice by the London Fire and Emergency Planning Authority, listing several fire safety issues at Grenfell Tower that required KCTMO to take action by May 2017 (Busby, 2018).

Despite the litany of violations, the RBKC municipal authority and the KCTMO, tasked with protecting and safeguarding tenants and their livelihoods, did nothing to avert the catastrophe. Ross (2017:3), on the heels of the disaster notes “that there was a strong sense of grievance in a neighborhood that felt overlooked and neglected. The neighborhood whose worst fears had come true and suddenly attracting the attention of the world. The authorities, in the immediate aftermath of the disaster, were nowhere to be seen.” Echoing the same sentiment, Lindsey (2017) writes that:

“Grenfell is the point where we collectively recognize the criminally destructive effects of Britain's class inequality. When inequality flourishes, it impacts more heavily on those at or near the bottom. The assumption that the victims caused their poverty by being stupid compounded their experience of material poverty. The privileged can buy their safety, security, legal representation, and kid themselves that it is because they are smart and know the answers, so they do not have to listen. Their willful deafness has come to haunt them.”

Examining the local social geography of Grenfell Tower and the surrounding Lancaster West Estate, MacLeod (2018:460) reveals an astonishing landscape of inequality across Kensington and Chelsea's borough. He finds that due to endemic inequality combined with malevolent geography of injustice, for several years, there was a disregard for residents' concerns about the building's safety by the RBKC municipal authority and the KCTMO. These very organizations were supposed to protect and safeguard the livelihoods of the tenants. Similarly, Jenkins (2017) writes that the fire was a "terrible price of Britain's inequality." According to him,



the catastrophe reflected Britain's inequality fueled by institutional incompetence and neglect. He notes that the tenants were invisible; their repeated warnings and escalating fear that the building they lived in was a death trap were ignored, exposing them possibly, to criminal levels of neglect. To make sense of the tragedy, Jenkins (2017) also turns to the social makeup of Grenfell Tower. He, too, notes the combined effects of class and race inequality. He points out that black and minority ethnic people in social housing are housed, disproportionately in flats. Flats are the houses above the fourth floor of the tower blocks in England. Housing black and minority ethnic groups in flats mean that black or Asian children make up most children who live above the fourth floor of tower blocks, in England. The housing of blacks and minorities on this particular level of the building was not because of a shortage of housing but rather, that ethnic minorities were more likely to be working-class by wage and occupation, and to experience discrimination – tacit or outright – in the allocation of housing (Jenkins, 2017).

In his analysis of how disasters develop through organizational behaviors, Turner (1976:281) argues that with every disaster, there is an incubation period. This period begins long before the onset of a disaster. This disaster was no different. The complacent indifference of critical organizations, the layers of apathy, and casual disregard, the government's reluctance to update and enforce building regulations, were all conducive to organizing the Grenfell fire disaster. However, beyond these obvious and immediate factors, are others more insidious and do not lend themselves to instant scrutiny. Undergirding the institutional and administrative failures, were historical processes that, in some ways, laid the foundation for what unfolded in the fire catastrophe. Since the Thatcher government's neoliberal policies, critics have pointed to Britain's inability to provide decent housing for its growing population. For example, the government's insistence on starving local authorities through relentless enforcement of austerity

is a policy that has its origin in the Thatcherite narrative that social housing and tenants were inherently problematic in a "property-owning democracy" (Kennard, 2013). Austerity is the greatest, and most insidious, public-policy failure of the last generation. Thatcherite privatization was most significant in the housing market, by championing free-market consumerism at the cost of planned social housing. Kennard (2013) argues that it was a cynical device to encourage private-sector landlords to take over councils' housing stock. He concludes that Thatcher's prime motive was to destroy council housing - a mission which, according to him, was almost accomplished.

Furthermore, following the 2008/9 global financial crisis and ensuing economic uncertainty, the roll-out of austerity politics has seen significant welfare retrenchment and a recalibration of the state-citizen relationship. This ideology meant that all councils now feel it is their job to spend as little as possible (Jenkins, 2017).<sup>7</sup>

A detailed narrative of how the fire developed showed a pattern of neglect. Simple, timely measures could have averted the catastrophe. Orr (2017:34) argues that it is valid to interpret 'Grenfell not a disaster or a tragedy, but an atrocity.'<sup>8</sup> The fire was not a natural disaster, it underscores the role of institutions in organizing disasters. It emphasizes the broad applicability of the concept of Institutional Neglect, developed in Chapter 3.

### **Hurricane Katrina**

When Hurricane Katrina made landfall in 2005, Stallings (2006: 223) notes that "the cultural repertoire of causal explanations for disasters had grown considerably and all put to use in explaining what had happened to the city of New Orleans." While evangelical ministers

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<sup>7</sup> <https://www.theguardian.com/commentisfree/2017/jun/15/lessons-grenfell-tower-safer-cladding-tower-blocks>

<sup>8</sup> <https://www.theguardian.com/commentisfree/2017/dec/08/grenfell-tower-survivors-homes-fire>

proclaimed that God was punishing the city for past sins and for plans to host a gay and lesbian convention, several scientists and environmentalists speculated that the intensity of Katrina and other hurricanes was indeed a loss of balance of nature which was causing global warming. In post-Katrina, accusations, and counteraccusations by politicians and pundits alike, were hauled around concerning who or what was to blame for the catastrophe besides Mother Nature.

In his sociological account of Hurricane Katrina, Brym (2008) provides a historical narrative of the bad decisions, failures, and neglect by institutions and their bureaucratic operatives, which converged to produce the disaster. He writes that despite the overwhelming information about the imminent storm, there was no preparation for the inevitable. His analysis considered a broad range of issues, from social to ecological. He pays attention to the prevailing social conditions in the area, noting that before Katrina hit, the economic fabric of the region, weakened by state negligence, left its population vulnerable. For example, the oil and gas industry, he recollected, had relocated to Texas, which downgraded economic opportunities for New Orleans by several levels. The relocation of the gas industry meant that apart from tourism, the economic situation of New Orleans was already in trouble, defined by "scarce resources."

The city of New Orleans, which took the brunt of the hurricane, was 68 percent African American and just 25 percent non-Hispanic white. Most people affected by the disasters were poor, black, female, old, renters, and in poor medical condition. Brym (2008:63) writes that "New Orleans on the eve of Katrina was unusually poor, black, segregated, unequal, violent, and vulnerable to flooding." The poverty rate for African Americans was 35%, which was 7.5 % above the national average for African Americans. When Hurricane Katrina landed, 28% of New Orleans' population lived below the poverty line, and Louisiana was one of the poorest states in the United States. 84% of those living below the poverty line were African Americans, a quarter

did not own a car, and many of them had never even left the city. Two-thirds of the city's public schools were deemed "academically unacceptable" by the US Department of Education (Brym 2008:61-3). Louisiana's homicide rate was the highest of any city in the country, and the population increasingly concentrated in the city's least desirable, low-lying areas. Racism was rampant and social inequality firmly entrenched and institutionalized (Brym, 2008:59).

There were also troubling ecological issues such as the grossly inadequate flood control measures, which were deemed incapable of tackling the problems of disappearing coastal wetlands and the incompetence of the levees. The levees were fragile and poorly maintained even as the population grew, and flood-prone neighborhoods became developed. Experts concerned about the degradation of wetlands warned that the city was at risk in the event of a hurricane. According to Brym (2008:74), the Katrina disaster ultimately resulted from the imbalance of power between upper and lower classes, and between authorities and subordinates. As in the Grenfell Tower fire, the hurricane Katrina disaster was organized by issues and conditions driven by racism, poverty, inequality, poor infrastructure, and inadequate human capital. Brym (2008:53) concludes that for centuries, the powerful and wealthy made economic and political decisions that placed New Orleans, and especially its poor black citizens, at risk of different kinds of hazards and that "there was nothing natural about this state of affairs." For him, centuries of human effort in the form of geopolitical rivalry, economic competition, public policy, and social exclusions were required to create the disaster.

### **The 1995 Chicago heatwave**

The 1995 Chicago heat wave was considered an extremely unusual event and one of the most severe weather systems to hit Chicago in its recorded history. It caused 739 deaths and thousands of hospitalizations in one devastating week (Klinenberg, 1999). The official account

was that the heatwave was a natural disaster. The fatalities and health crisis which unfolded following the disaster were attributed to the failure of the residents to heed instructions to evacuate. According to the authorities, the victims failed to leave their apartments and find air conditioning or at least to open their windows and doors when neighbors or service agencies contacted them (Klinenberg, 1999:259). Klinenberg (1999) highlights the socioeconomic conditions of the area and how state bureaucratic institutions at structural and conjunctural levels exacerbated the event. Through an interactionist approach [9], Klinenberg (1999) finds that a combination of extreme weather, political mismanagement, and neglect of vulnerable city residents convert to make the disaster happen. He rejects the simple construction of the event as "natural." He insists instead that the disaster was a sign and symptom of new and dangerous forms of marginality and neglect endemic to contemporary American big cities, particularly severe in Chicago. He finds that "institutional and social mechanisms upon which extreme forms of American insecurity are built" contributed to organizing the disaster. There was also what he refers to as the "new social morphological conditions of neighborhoods abandoned by businesses and the state. The neighborhoods lacked the quality of public spaces, the vigor of street-level commercial activities, and the centralization of support networks and institutions (Klinenberg, 1999:240-2).

Klinenberg (1999) identifies other areas of vulnerabilities unmentioned or under-developed in the emerging debate on the new urban poverty in America. These include the strict social isolation of poor seniors and the degradation and rising conflict in urban hotel residences and the lack of social and economic support for vulnerable citizens. The isolation and alienation resulted from a complex set of social factors arising from a decaying urban environment including, fear of potential violence, crime, and the absence of social networks. He demonstrates how place-

specific risk factors, which were informed by institutional processes, contributed significantly to the higher death rate among the African American community of North Lawndale (243). The retrenchment of the state and radical reduction of public services in the 1980s resulted in massive cutbacks in spending for social services. Changes in public service delivery and the threats to public health stemming from privatization and other radical shifts in local government administration led to the absence of mechanisms and organizational competency to activate even the paltry programs that remain.

Most importantly, Klinenberg (1999:256) points to the entrenched American history of "city governments' unresponsiveness to the needs of poor communities." According to him, the city of Chicago's emergency response to the disaster was disorganized, ineffective. When the heatwave struck, several city departments failed to activate services that saved hundreds of lives. For example, the Police Department neglected to activate the local units designed to assist seniors. The Fire Department had no mechanism for issuing a heat emergency. The Department of Human Services did little to contact isolated seniors to warn them of the dangers of the climate or provide any assistance at the onset of the event. Klinenberg (1999:256) concludes that the heatwave in isolation, without the extenuating social circumstances engendered by the state's actions, was not enough to cause the disaster.

### **The Sahel famines of the 1970s**

Most disasters, such as those considered in the preceding sections, are rapid-onset events and often happen quickly. Slow onset disasters are different, and discussions about them focus mostly on drought-related hazards. For the outcome of drought to manifest in disaster, it can take months or sometimes years. The outcome often takes the form of severe water and food shortages and, ultimately, famine. The drought of 1968–73, and the famines that followed in the

sub-Saharan region of West Africa known as the Sahel, was considered one of the worst slow-onset disasters in modern times.

The significance of the Sahel famines and the reasons it deserves mention in this research is that it was the crossroads of the movement between the hazard approach and the vulnerability approach to disaster research. Researchers who favor the hazard/scientific paradigm chose to interpret the disaster as a natural event and merely the result of a drought. In contrast, those who favor the vulnerability approach saw it as a reflection of social conditions caused by human actions (Hewitt, 1998: 82). The famines also highlight the importance of adopting a historical perspective that the social vulnerability approach facilitates.

The Sahel is the southern edge of the Sahara Desert in Africa. It spans 4,500km from Senegal through Mauritania, Mali, Burkina Faso, Niger, and Chad, and blends seamlessly into the slightly less arid Sudan-Sahel belt to its southern edge. The livelihoods of the 50 million people of the Sahel comprise diverse strategies that include a variety of urban occupations but mostly agriculture, livestock herding, fishing, and short and long-distance trading. Farming in the Sahel region relies almost entirely only on three months of summer rainfall (Batterbury, 2001:1-2). The history of the Sahel is, therefore, one defined by short or extended periods of drought. In 1972, after five years of relentless drought, the famine that arose brought catastrophe to millions of people in the region. Sheets & Morris (1974:24), recall that in a nutritional survey in four of the six Sahelian countries, US Public Health Service experts calculated at least 100,000 deaths from the drought during 1973 alone. Most of the dead were children. According to them, on a proportional basis, it was as if more than a million Americans had been struck down by a natural disaster.

Sheets & Morris (1974:5) stated that, as European cultures still languished, the Sahel was the site of early medieval African empires with thriving commerce and culture and once flourished as a seat of learning with a vast library and university. However, by the late 19th century and after centuries of exploitation and colonialism, that rich past gave way to a collection of indigent French colonies heavily dependent on external aid for their very survival as organized societies. The Sahel became peripheral, once a vast empire, epitomizing much of the tragedy of African history.

In the 17th and 18th centuries, as Western Europe emerged as the core of the world economy, Africa was pulled into the world economy as a 'periphery of the periphery,' mainly providing slaves for the Americas (Cant, 1972). Manufactured goods, including weaponry, were exchanged for slaves shipped to the Americas. Also, while the character of capitalism changed from mercantile to industrial in the 19th century, a scramble for Africa ensued with rival industrial powers competing for control over raw materials, labor, and markets. The Sahel, with the rest of West Africa, was divided up. As each rival colonial power developed its bureaucratic system including armies, taxes, trade posts, and frontiers for various colonies, pre-colonial trade which existed among ecological zones was disrupted, and trade routes across the deserts and savannas saw strict restriction. The Sahel's insertion into the global economy meant that pastoralists lost their means of livelihood through the loss of farmland and grazing land. They were also forced to pay taxes on their herds. With the eventual takeover of traditional grazing by the colonizing forces for commercial farming, the pastoral population suffered a tremendous decline in resources. The impact of the new economy on local traditional modes of production and the complementarities between them forever changed not only the region of the Sahel but also other adjoining Western African countries.



Another significant disruption of the Sahel was the introduction of the cash crop by colonizing powers, which undermined traditional subsistence farming. There was a continual reduction of the subsistence base of farmers and herders. African villagers who used the more fertile margins of the Sahel to grow millet and sorghum, which were traditional subsistent food crops vital to their existence, lost a significant food source. Instead, they were forced to grow peanuts or cotton to pay taxes to the colonial administrations and for prices over which they had no control. This commercialization threw a wrench into the region's economy with a substantial negative impact on the "traditional symbiotic relationship between nomadic livestock and the crops" (Sen, 1983:129). Ownership of food, Sen (2007:45) argues, "is one of the most primitive property rights, and each society, have rules governing this right." The culture of colonial exploitation, which continued into the era of independence in the 1950s, denied such primitive property rights to the people of the Sahel and, in so doing, reduced well-fed farmers and herders to victims of famine (Cant, 1972:2 - 3). Although the colonial administrators eventually left, both the administrative and physical structures they established continue to exist. Today, the historical imperialist relationship continues as 'core' nations firmly control the markets, prices, investments, and global financial institutions. Cant (1972:3) finds that the "famine in the Sahel is an act of man imposed on the Sahel peoples by a sequence of outside interventions that began with the slave trade, was intensified with the colonial system and which has now entered a new phase with the intervention of international development agencies and multinational corporations." Unfortunately, while Africa remains as much a part of the global division of labor as ever before, West Africa still looks seawards and outwards, and the Sahel remains firmly marginal and peripheral- the lingering consequences of colonial exploitation remain. Today, Sahelian countries continue to suffer periodically from hunger.

## **Conclusion**

The goal of this chapter was to review the literature pertinent to the research, emphasizing the critical importance and relevance of the social vulnerability approach to understanding disasters. The chapter also sought to highlight the even greater role that institutional bureaucratic interventions play in influencing social vulnerability. As evidenced in the review, bureaucracies play a foundational role in contributing to disasters and can be a crucial lens through which the organization of disasters is understood. Until now, however, the role of institutional bureaucracies has not been sufficiently considered in disaster research. This research recognizes this as a gap in literature. As is the experience of this research, this inadequate attention to the critical role of institutional bureaucracies creates methodological challenge for some researchers who struggle to link empirical work to established concepts. The inadequate attention to the influence of bureaucratic institutions in disasters also has implication for disaster practitioners who may not be able to sufficiently address the root causes of disasters. The review establishes the necessity for the development of the Institutional Neglect framework by showing that the social vulnerability approach is insufficient in determining the root cause of disaster events. In recognition of the role of institutional bureaucracies in incubating disasters the research develops Institutional Neglect as a concept for understanding disasters. As such, both a conceptual framework and an analytical framework of Institutional Neglect are developed in Chapter 3. In this way, the research fills the gap in literature and contributes to new knowledge. The frameworks are adopted for analysis in the research.

# Chapter 3

## Conceptual and Analytical Framework

### Introduction

This research starts with the recognition that disasters occur within a complex historical, socio-economic, and political context and adopts the social vulnerability approach to investigate the circumstances of the 2012 flooding in Benue State, Nigeria. The social vulnerability

A concept of Institutional Neglect reminds us that to understand vulnerability to the risks of natural hazards, we must reach beyond simple identification of the factors that engender social vulnerability and determine the source from which they originate. Examining the root of vulnerability is the most effective way of addressing risks to natural hazards.

approach constitutes a broad framework within disaster/vulnerability research used in analyzing social, economic, and political factors that create vulnerability to the risks of natural hazards. The goal of the chapter is to develop the conceptual and analytical dimensions of the perspective of Institutional Neglect to enable a broader understanding of social vulnerability, focusing on the 2012 flood disaster. Early on in the research, it

became clear that the social vulnerability approach would not be sufficient to fully respond to research inquiry. Data and observations from the research, as well as insights from other disaster research point to the influence of bureaucratic institutions as foundational to how disasters are organized.

While a great deal of work on vulnerability focuses on identifying and building on the factors or conditions that might create social vulnerability, the source from which these factors emerge receives little attention. Indeed, as seen in the literature review in Chapter 2, the factors

of vulnerability are embedded in failure of bureaucratic institutions to equitably distribute public goods. The research identifies this failure as Institutional Neglect. The research recognizes Institutional Neglect as the root of social vulnerability and develops it as a framework for understanding social vulnerability to the threats of natural hazards. Developing a framework of Institutional Neglect sets a more rigorous standard for determining, understanding, and analyzing social vulnerability.

The chapter begins with a basic definition of 'institution' to specify the context of its application in this research. This chapter also provides a brief history of the emergence of the term, describes what constitutes Institutional Neglect, and demonstrates its relationship to social vulnerability. It justifies the development of the concept of Institutional Neglect and presents a graphic table and diagrammatic representations of the conceptual and analytical frameworks of Institutional Neglect.

### **Defining Institution<sup>9</sup>**

While the study of institutions is not part of the focus of this research, a simple definition is necessary to provide context for its use in this work. According to Scott (1995:235), there is "no single and universally agreed definition of an 'institution' in the institutional school of thought."

However, he writes that:

Institutions are social structures that have attained a high degree of resilience. [They] are composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life. Various types of carriers, including symbolic systems, relational systems, routines, and artifacts, transmit institutions. Institutions operate at different levels of jurisdiction- from the world

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<sup>9</sup> The study of institutions as structures and mechanisms of social order has been the principal focus of the social sciences such as political science, anthropology, economics, and sociology. Émile Durkheim described it as the science of institutions, their genesis, and their functioning (Traugott, 1978). The Nigerian government and its institutions as formal mechanisms for political rulemaking and enforcement of the rule of law is the reference for this study.

system to localized interpersonal relationships. Institutions connote stability but are subject to change processes, both incremental and discontinuous (Scott, 1995:233).

Institutions are permanent or semi-permanent systems of public administration where different elements of interconnected structures and processes operate to execute government agendas and programs and to improve efficiency in public services. Swift and ameliorative governmental response to a range of dangerous circumstances are crucial to the safety of a society. This is especially the case given the expanding role of such a "control organization" play in modern life. In this capacity, government organizations are in a position to arbitrate "acceptable risk" by either pursuing issues that affect the public or not (Beamish, 2002:150). In this research, institutions refer to government bureaucratic organizations/institutions. In the context of disaster research, Beamish (2002:150) describes bureaucratic organizations/institutions as "control organizations" in the sense that they are agencies in a position to arbitrate "acceptable risk" through swift and ameliorative governmental response. Examples of bureaucratic institutions in Nigeria that are relevant to the research include both federal and state governments broadly and specifically the Ministry of Environment, the Ministry of Water Resources, NEMA, and, most importantly, the local government institutions in the study areas. Also, 'institution' and 'organization' will be used interchangeably in this research. Government institutions are responsible for the oversight and administration of specific functions as well as the delivery of new programs created by legislation. What cannot be overstated is the government's primary responsibility to provide essential public services to its citizens. In the case of exposure to the risks of natural hazards, access to public goods and services makes a difference between survival and recovery or unnecessary suffering, and in some cases, tragic fatalities.

## **Defining Neglect**

Neglect is the failure to take care of something or someone by not exercising appropriate and ethical ruled care or responsibility expected within specified circumstances.<sup>10</sup> In law, it is a breach of a duty of care that results in damage. It is a failure to exercise that degree of care in circumstances where the law requires for the protection of other people or their interests, which may suffer from the absence of such care. Formally, institutional neglect has mostly been applied to the standard of care as it relates to abuse involving the maltreatment of a person (usually children or older adults) by a system of power. The maltreatment of a person often happens within emergency care facilities such as foster homes, group homes, and nursing homes.

## **The historical origin of the concept of institutional neglect**

Institutional neglect/abuse has roots in sciences and became part of that disciplinary discourse after World War II. Between 1945 and 1949, an International Military Tribunal at the infamous Nuremberg Trials charged former leaders of the Nazi regime and tried them as war criminals. The trial of 23 doctors or collaborators in 1946 revealed a perverse racist ideology that allowed and institutionalized criminal behaviors in public health and human research. Prominent among the group were psychiatrists, whose transgressions included the use of psychotropic drugs. A direct outcome of the trial was the drafting of the Nuremberg Code in 1947. "The Nuremberg Code is considered as the first international code of ethics for research with human beings and aimed at preventing any repeat of the atrocities committed in Nazi Germany. The code, drawn up to safeguard the rights of patients and those involved in human research",

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<sup>10</sup> Adapted from *Encyclopaedia Britannica*. Merriam Webster. Retrieved 12 June 2018.

continues to have a profound influence on human rights and bioethics (Lopez-Munoz et al. 2008:791-794). The code was the basis for subsequent norms and codes in the fields of biomedicine, psychiatry, and psychopharmacology (Declaration of Helsinki, 1964; Declaration of Hawaii, 1977).

Institutional neglect is also associated with the child protection system, which emerged in its modern form about 55 years ago in the United States. It began as a critique that focused on the failure of public institutions to protect vulnerable members of society, especially within the family unit and, regarding child protection and elder abuse. In the history of that period, the threads of child protection, adult protection, and family violence were intertwined. Before the 1940s, family conflict and maltreatment of its vulnerable members were outside the domain of government intervention in the United States. Responsibility for assisting families in need at that time was assumed mainly by religious organizations and private charitable institutions. The child protection system emerged out of the publication of an article in the *Journal of the American Medical Association*. The publication was from a team of physicians led by a pediatrician, Henry Kempe, at the University of Colorado. Kempe announced the existence of a "battered child syndrome" (Kempe et al., 1962). Kemp, who founded the International Society for Prevention of Child Abuse and Neglect, led a movement to adopt mandated reporting laws, quickly adopted in all 50 states of the United States. The views from this movement led to The Child Abuse Prevention and Treatment Act of 1974 (Nelson, 1984) and adopted in fields such as social work.

The current system for the protection of elders and other vulnerable adults grew from the child protection system. Following these footsteps, some states developed new public welfare programs during the 1940s and 1950s to protect adults who could not manage their resources or protect themselves from harm. By the 1960s, the federal government began to show interest in

the problem and put forth legislation directed towards all adults that are defenseless, and susceptible to being hurt by other people. The United States Congress, in 1962, passed the Public Welfare Amendments to the Social Security Act. The Act authorizes payments to the states to establish protective services for persons with physical or mental limitations or exploited or neglected.<sup>11</sup>

## **Conceptualizing Institutional Neglect**

Institutional Neglect is the breakdown in governance where the equitable distribution of public goods is impeded and creates vulnerability within the population. This vulnerability has consequences for stunted individual progress and community/statewide deprivations, even of the most 'basic needs' for living such as food, water, clothing, and shelter. Since the early days of social science field research on disasters, the impact of neglect by institutions has been a recurring theme in the analysis of disasters. Researchers have implicitly, if not explicitly, advanced vital ideas, perspectives, and narratives that this research finds inextricably tied to institutional neglect. Although Institutional Neglect has not been a focus of any systematic disaster research, it has long been a subject of consideration in other disciplines as a critical source of vulnerability. Institutional Neglect helps situate the flooding and other disasters within a more specific context. It enhances the understanding of social vulnerability by providing a link to the root cause of social vulnerability's most generic factors. As a concept, it adds clarity and forges a deeper understanding of the complex, multi-faceted nature of the processes that surround disaster events. Two significant components of institutional neglect are time and

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<sup>11</sup> United States Department of Health, Education, and Welfare, 1966. <https://www.ncbi.nlm.nih.gov/books/NBK98807/>



pervasiveness of impact. Time refers to the period of accumulation of the consequences of actions or inaction. The pervasiveness of impact is the widespread and long-lasting impact of the outcomes of Institutional Neglect.

Institutional neglect crosses categorical boundaries and provides numerous cases to abstract from, both in academic disciplines and fields of work. The child/elder abuse/neglect definition of Institutional Neglect reflects its meaning and utility across the board. It defines Institutional Neglect as "intentional failure to provide necessary assistance and resources for the physical needs of the vulnerable."<sup>12</sup> It refers to actions and behaviors, or lack of actions and behaviors that cause harm or risk of harm within a trusting relationship.

### **The frameworks of Institutional Neglect**

Drawing on perspectives from disparate fields, and observations in various disaster research, a conceptual framework of Institutional Neglect, involves intentional passive acts of omission or commission by bureaucratic institutions. It is concerned with the performance of institutions and organizations regarding the distribution of public goods and service that ensures secure and resilient livelihoods. The primary steps in developing the concept of Institutional Neglect involve identifying the phenomenon and establishing how it is repeatedly reproduced, within different circumstances or settings, to establish a pattern. To identify the phenomenon requires a systematic review of the relevant literature. The literature review in Chapter 2, reveals a pattern of Institutional Neglect, occurring in various disaster situations.

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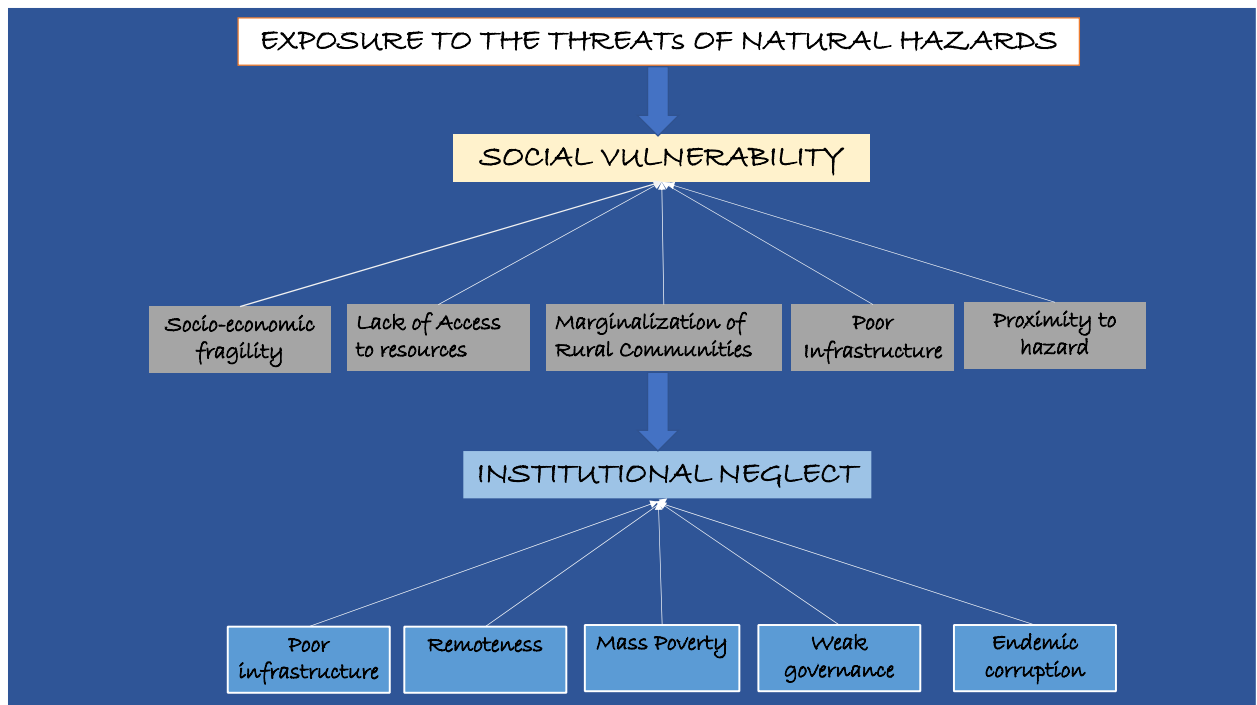
<sup>12</sup> Ibid

*Table 1 Graphic table of Institutional Neglect*

Framework	Focus	Goal	Key Indicators	Pros	Cons
Institutional Neglect	Institutional processes	Outlines the relationship between how institutions operate and how they influence people's vulnerability to hazards	<ul style="list-style-type: none"> <li>+ Absence/weak institutional infrastructure</li> <li>+ Lack of access to resources</li> <li>+ socio-economic fragility</li> <li>+ Lack of social capital/network</li> </ul>	<ul style="list-style-type: none"> <li>+ More accurately reflects reality</li> <li>+ Directly links root causes and establishes relationships between risk, exposure and social vulnerability</li> <li>+ contextual and processual</li> <li>+ Broad applicability</li> </ul>	Can be reductionist

Table 1 is graphic representation of the concept of Institutional Neglect outlining the focus, goal, key indicators, advantages, and disadvantages of the concept.

*Figure 5 Conceptual framework of Institutional Neglect*



The goal of the Institutional Neglect framework is to outline the relationship between how institutions perform their functions and people's vulnerability to natural hazards. At the bottom (root) of the model are five factors of Institutional Neglect identified in the research. These factors are not mutually exclusive. They interact with each other and reinforce one another to engender Institutional Neglect. It is not uncommon that where one factor exists, others are also present. Institutional Neglect produces the factors that influence social vulnerability to natural hazards.

As alluded to previously, Institutional Neglect, as represented here, is the root of social vulnerability. Identifying Institutional Neglect as the source of social vulnerability is a vital contribution of this research to disaster and vulnerability research. In previous studies, the factors of social vulnerability were immediately considered as ends in themselves to understanding social vulnerability without the necessary determination of how they emerged in the first place. However, this research deems that merely identifying the factors of social vulnerability is not enough to understanding disasters and addressing risks of natural hazards. The factors of social vulnerability have origin in Institutional Neglect. Hence, the development of this framework provides an added layer of analysis that helps to address the root cause of disasters.

Finally, Institutional Neglect is not only useful and applicable to understanding natural hazard situations. It can also have applicability in human-induced technological and industrial disasters. Control organizations (federal, state, and local agencies) created to monitor and, in times of the crisis, identify, protect, and enforce the law. Control organizations are entrusted with the power to forthrightly and judiciously appraise and stem potential threats before injuries occur. Many agencies have often failed in these responsibilities. Organizational theorists such as Barry Turner, Thomas D. Beamish, Joseph L. Hall, and Diane Vaughan have pointed to the

failure of regulatory oversight as a defining contributor to technological and industrial disasters. For example, Sylves and Comfort (2012:98) find that both the 1989 Exxon Valdez oil spill disaster as well as the 2010 BP Deepwater Horizon oil spill disaster, were caused by a confluence of untoward incidents in an unforgiving environment that demonstrates a lack of coordination and government oversight before the disasters.

Similarly, Gramling and Freudenburg (2012:64) write that, even before the Macondo blowout, a 2008 Inspector General report concluded that the agency's relationships with oil companies were a matter of being in bed with the industry "in a pattern of sex, drugs, and the wrong kind of role. Officials accepted gifts, engaged in drug use, and yes, even had sex with employees of the energy firms from which they were expected to collect royalties." Beamish (2002:169) concludes in his analysis of the Guadalupe oil spill that government remedial organizations certainly did not cause the spill. Their inaction aided its continuation until it was too late to avert this ecological catastrophe. In the wake of the Bhopal industrial disaster in India, Indian laws were inadequate to protect public health and safety against industrial hazards (Rosencranz,1988:337). In many ways, the concept of Institutional Neglect creates an understanding of disasters that goes right to its root cause.

### **The utility of the concept of Institutional Neglect**

If the structures which engender social, economic, and political precariousness to natural hazards are visible, how institutional processes operate to create social vulnerability to hazards must be understood. Institutional Neglect, as a concept, has tremendous benefits for the analysis of disasters:

- It helps to narrow the expansive character of the social vulnerability approach, which can sometimes lead to the ineffectual determination of the causes of disasters. It sometimes produces generalized conclusions. Also, Institutional Neglect makes the deconstruction of the role of institutions an immediate priority, saving valuable time from being wasted on chasing after factors that may not lead to productive or practical conclusions.

- It promotes an understanding of the mechanisms that create exposure to hazards, providing a clear progression of disaster events as a processual narrative, linking the most remote causes to those most current and visible. It exposes underlying institutional processes that create the conditions for disasters to occur.

- It exposes the conditions of vulnerability and inequality and draws attention to the most vulnerable in society.

- It encourages preventative interventions. To know better is to do better.

Recognizing the source of social vulnerability directs attention to developing strategies towards preventive and response measures.

- It promotes accountability and institutional responsibility. When faced with evidence of the roles that institutions play in creating vulnerability, they may have no choice but to reverse course and move to provide resources that will help build resilience.

- It holds particular relevance for developing countries as a tool for disaster analysis. This is because although LCDs represent 11 % of the population exposed to hazards, they account for 53 % of all casualties. The most developed countries, in contrast, represent 15 % of the population exposed to risks and have only a 1.8 % fatality

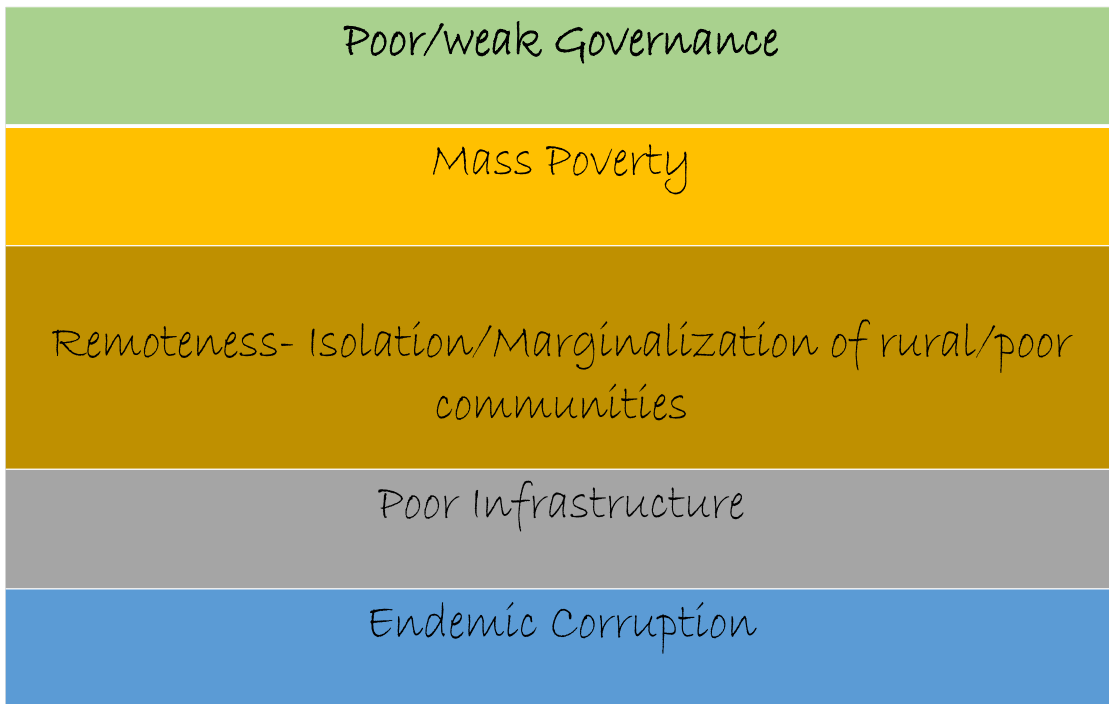
rate (Peduzzi, Dao, Herold & Mouton, 2009). Scientists and environmentalists continue to express concerns about growing challenges of adverse changing weather patterns- global warming where the third world or developing countries will bear the brunt of its unfolding challenges. For example, in a study of CABRI-Volga Project Deliverable D3<sup>13</sup> which focused on current practices in the EU and Russia regarding environmental risk management in large river basins, the UN university warns that the least developed countries (LDC) are most vulnerable. The Institutional Neglect framework is even more important for developing countries such as Nigeria, where institutional accountability and transparency are in short supply. In such countries, bureaucratic failure to equitably distribute resources that help build resilience to shock from the impacts of natural hazards is often explained as 'lack of resources'. 'Lack of resources' is an explanation offered immediately in the aftermath of natural hazard events and readily accepted at face value since lack of resources is often associated with poorer nations. Since these countries are associated with 'scarce' resources and poverty, the assumption is that the human suffering and the inability of the government to cope with the disaster result from the country's lack of resources. It is no secret that many state actors in these regions exploit this 'common sense' assumption to cover up widespread mismanagement of resources. A preliminary investigation in this research revealed that lack of resources was not the precipitating factor in the 2012 flooding disaster in Nigeria. Public media accounts show that the failure of government bureaucratic institutions to equitably distribute public goods that aid citizens in preparing and responding to flood

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<sup>13</sup> <https://studylib.net/doc/10677828/selected-caste-study-of-cabri-volga-project-deliverable-d3>

emergencies, resulted in the disaster. A focus on deconstructing the institutional processes that influence disasters will ensure an adequate address of the root causes. Therefore, it is imperative for these countries that analysis of disasters immediately recognizes all relevant actors and factors. The Institutional Neglect framework fosters such recognition.

*Table 2 Analytical model of Institutional Neglect*



The analytical framework of Institutional Neglect is adopted in the analysis of social vulnerability to flooding in Chapter 6 and the discussions in Chapter 7.

### **The analytical framework of Institutional Neglect**

Components of Institutional Neglect identified in various disaster and vulnerability research and gathered from this research were used to develop five factors of Institutional Neglect. The development of the conceptual and analytical frameworks was necessary to bring greater visibility to the factors that influence social vulnerability. These factors will be used in

discussions in Chapter 6 to show how exposure to the risks of flooding is a function of social vulnerability rooted in Institutional Neglect. The analytical model presented here follows from the conceptual framework of Institutional Neglect. While the analytical framework guides discussions and analysis, two additional frameworks that support the Institutional Neglect framework and which will enhance the analysis are also employed. They are the Hazards-of-Place model developed by Cutter (1996) and the progression of vulnerability framework by Wisner, Gaillard, and Kelman (2012:32). They are presented later in this section.

The factors, as depicted in the model, follow no order of importance. However, poor governance holds greater significance for understanding how the other factors of Institutional Neglect originate and, therefore, is an excellent place to start. Each factor is briefly discussed to provide context for its usage in the research.

### **Poor/weak governance<sup>14</sup>**

Weak governance is a factor of institutional neglect and a driver of disaster risk. It is associated with many other risk drivers, such as poverty and inequality, poorly planned urban development, and globalized economic development. Poor/weak governance is the government's inability to provide adequate measures of political goods. Therefore, physical infrastructural networks deteriorate, schools and hospitals show signs of neglect, bureaucratic competence is lost, GDP per capita, and other critical economic indicators fall and keep falling, sometimes dramatically. At the same time, levels of venal corruption are embarrassingly high and

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<sup>14</sup> Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them.



escalating. In poor/weak governance, the system for the delivery of public goods has become dysfunctional. GDP per capita, the UNDP Human Development Index, Transparency International's Corruption Perception Index, and Freedom House's Freedom of the World Report are some of the indicators on which weak governments perform poorly. Transparency and accountability are the steppingstones to reducing Institutional Neglect. Additionally, establishing an integrated systems approach to governance that features strong coordination across sectors and the delegation of responsibilities to the local level.

### **Endemic Corruption**

Corruption is a complex concept with varying meanings. Some of the main characteristics of corruption include bribery, self-enrichment, fraud, cronyism, mismanagement, embezzlement, and sheer abuse of power, to enrich oneself or associates (van Duyne. 2001:3). According to Transparency International (2018),<sup>15</sup> corruption can be interpreted as "the abuse of entrusted power for private gain," and classifies it as grand, political, and petty, depending on the amounts of money involved and the scale at which it occurs.

There are various forms of corruption. Political corruption is where policies, institutions, and rules of procedure are manipulated in the allocation of resources and financing by political decision-makers, who maintain their power, status, and wealth by abusing their positions. Grand corruption consists of acts committed at a high level of government which distort policies or the state's central functioning and enable leaders to benefit at the expense of the public good. Grand corruption takes away the vital resources used to mitigate disaster risk. Petty corruption is the everyday abuse of power by low- and mid-level public officials in how they interact with

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<sup>15</sup> <https://www.transparency.org/what-is-corruption>

ordinary citizens, who are only trying to access essential goods or services in hospitals, schools, police departments, and other agencies. Petty corruption greases bureaucracy's wheels, but it is more likely to stifle initiative (Transparency International, 2018). All these forms of corruption are associated with Institutional Neglect. All these forms of corruption are prevalent in Nigeria.

Corruption pervades every society. However, it has a more devastating impact on some more than others. Soliman and Cable (2011:736) note that while "corruption is widespread in global society, it is considered particularly troublesome in developing nations. The general assumption in political science is that corruption reflects the poor state of governance in a country. While corruption may not be linked directly to disasters, its accumulated effects and consequences enhance vulnerability to the threats of natural hazards. Corruption can cripple the provision of infrastructure necessary to build resilience to hazards, weaken the promulgation, application, and enforcement of safety standards and disrupt effective disaster response. Therefore, corruption is a crucial factor of Institutional Neglect, which is the main organizer of disasters.

### **Poor infrastructure**

Physical, social, and institutional infrastructures are critical for development as well as building resilience to natural hazards. Physical and social infrastructures are primarily the defining ingredients for building human capital and socioeconomic liberalization. Infrastructural systems provide services that maintain and enhance all facets of an economy and have a significant influence on the economic performance of businesses and household income. When infrastructures are viable and used to optimal capacity, they provide quality essential services and increase the quality of human life. Global studies emphasize the effects of poor infrastructure as an obstacle to development and innovation (Calderón & Servén, 2014; World

Bank, 2014). According to the 2016 World Risk Report, proper development and maintenance of critical infrastructure are a core component of disaster risk reduction, especially in emerging economies and developing countries. The report argues that during a hazard event, infrastructure can be a deciding factor in whether a situation becomes a disaster. For example, roads can provide access to help facilitate quick relief delivery to affected communities. Destroyed roads can hamper such exercise, and entire regions can be completely cut off from support (World Risk Report 2016). Enough and well-built infrastructure, such as high-quality power and transportation networks, can also limit the impacts of natural hazards in terms of loss of life and economic loss.<sup>16</sup> In a critical disaster situation, high-quality, efficient, and accessible infrastructure constitutes a significant factor in minimizing impact.

### **Mass Poverty**

Around the world, a significant number of people live in abject poverty. One in every five persons live below the poverty line, and entire nations and even international policies have failed to deliver results on eradicating poverty.<sup>17</sup> In every society, there is a socially acceptable minimum standard of living, and people living below this minimum level live in poverty. Mass or chronic poverty raises questions about good governance. According to the Human Rights Commission's Report,<sup>18</sup> there are three different ways to understand the concept of poverty: poverty as a dearth of essential resources; poverty as failure to meet basic or fundamental human needs, including food, clothing, and shelter, as well as health and education; and poverty as lack

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<sup>16</sup> *World Risk Report 2016: The Importance of Infrastructure*

<sup>17</sup> *Ibid*

<sup>18</sup> [www.humanrightsinitiative.org/.../millenium\\_report\\_review.htm](http://www.humanrightsinitiative.org/.../millenium_report_review.htm).

of opportunities.<sup>19</sup> Understanding poverty as a lack of opportunities is a modern interpretation that does not consider poverty merely as a lack of adequate income or ability to meet basic human needs. It also incorporates consideration of lack of possibilities or opportunities to escape poverty situations. Lack of opportunity in economic and political life is the root cause of poverty. As will be seen later in the research, most of those in the research location lack both economic and political opportunities.

### **Remoteness/Isolation**

Local governments within countries/states often administer and preside over rural areas. In Nigeria, local government administrations preside over the Local Government Areas (LGAs). Remoteness refers to the effects which physical distance between rural areas and the higher-level government or seat of power (usually federal government) have on rural areas. Remoteness refers to the social, economic, and political marginalization of rural communities due to institutional and spatial distancing. Institutional distancing is the administrative lapse by the central government in the development of rural areas fostered by spatial distance. Spatial distancing refers to the physical distance of rural areas from the central government. For example, in Nigeria, the average physical distance of most LGAs from the central government is about five hours. Administrative distance from the seats of power or government, arises from challenges of prioritization, monitoring, transparency, and implementation of policies. The state does not prioritize the development of rural areas. In Nigeria, more than half of the population of over 200 million lives in rural areas, which are mostly under-developed.

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<sup>19</sup> Amartya Sen's Theory of Poverty. From the selected Works of Mubashshir Sarshar  
<https://works.bepress.com/mubashshir/16/>

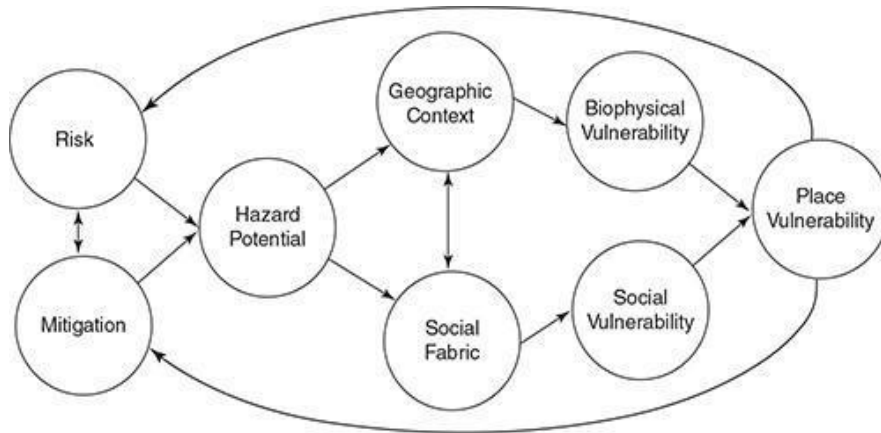
Remote or rural areas are often poorly connected by roads or alternative transportation options, and at the same time are affected by high levels of poverty and poor access to markets and social services. As noted earlier, regarding the political decision-making processes of central or regional governments, it is often precisely these remote areas that are given little attention and are far down on the political agenda in terms of priority. The transfer and exchange of material goods, as well as knowledge and experience in risk preparedness and response, receives less attention, particularly for rural areas.

Institutional Neglect amplifies distancing through the failure to deliver critical social and physical infrastructure and enhances the remoteness of rural areas. Although remoteness is mostly prevalent in developing countries, institutional and spatial marginalization of rural areas also occur in developed countries. Even though development is generally well diffused in developed countries, rural areas in developed regions can still suffer from certain distancing and isolation. Writing about the state of rural areas in the United Kingdom, Morris (2015:31) notes that they are characterized by the uneven distribution of resources informed by regional disparity.

Institutional and spatial marginalization and a lack of options for long-term risk reduction create high vulnerability to natural hazards. By improving both the material and institutional factors in remote areas, their long-term adaptive capacity towards natural hazards could increase significantly.

## Hazards-of-Place model of vulnerability

*Figure 6 Graphic model of the Hazard-of-Place model of vulnerability*



Source: Cutter (1996)

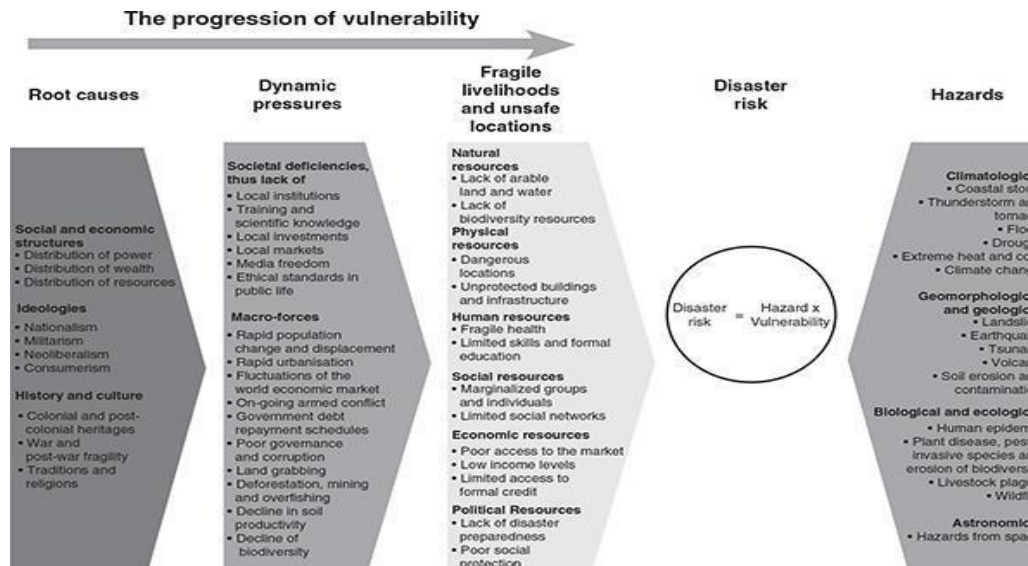
Additionally, the research adopts the Hazards-of-Place model of vulnerability developed by Cutter (1996). The model is the notion that disasters consist of a complex mix of natural hazards and human action. The Hazards-of-Place model allows for a holistic approach that seeks to understand disasters from both social and biophysical vulnerability perspectives. This model is very abstract, but the set of processes- 'social fabric,' which encompasses socioeconomic, political, and institutional causes of social vulnerability- is particularly relevant to this research. Social vulnerability is determined by the social fabric of a place. The geographic context includes the site and situation of the place and the proximity to hazard sources and events. The geographic context interacts with a hazard potential to produce the biophysical vulnerability. The social and biophysical vulnerability elements mutually relate and produce the overall vulnerability of the place. Notice that the place vulnerability has a feedback loop to the initial risk and mitigation inputs and allows for the enhancement or reduction of both risk and mitigation, which in turn would lead to increased or decreased vulnerability (Cutter, 1996:717)

The model will aid in generating a hazard-of-place representation for the research. The hazard-of-place representation is necessary to provide the geophysical context that includes the landscape features of the area and proximity to hazard. The primary method for measuring biophysical vulnerability is the proximity to the hazard itself.

In combining social vulnerability and biophysical perspective, the Hazard-of-Place theory facilitates an understanding of vulnerability that both depend upon the physical features that are specific to the area, as well as the social, political, and economic processes occurring at the local level which are, in turn, influenced by processes occurring at a national level. The research considers that disasters are a complex mix of natural hazards and human action and uses the Hazard-of-Place model to illustrate the different components of vulnerability that exist and surround the flooding event.

## Progression of vulnerability model

Figure 7 The Progression of vulnerability model



Progression of vulnerability model by Wisner, Gaillard, and Kelman (2012: 32).

The progression of vulnerability model (Wisner, Gaillard, and Kelman 2012:32) represents Cannon's older approach and the earlier versions of PAR (Pressure and Release model) (Wisner et al., 2004). It is adopted for the analysis in discussions in Chapter 6. The Progression of Vulnerability framework (Figure 8) is essential to the analysis in this study because it attempts to model the relationships among the different processes associated with disaster over time. Most importantly, it takes into consideration the root causes of disasters, which often can be remote geographically, or in time, from the local site of vulnerability. Examples of disaster where root causes were remote include the history of enslavement in Haiti. Even today, the country continues to be highly vulnerable to the threats of earthquakes, and Louisiana where hurricane Katrina revealed a history of endemic institutional neglect, steeped in racism. The Spanish conquest of the Inca was also identified as the root cause of Peru's Five-Hundred-Year earthquake (Oliver-Smith, 2002). Dynamic pressures, which are decadal-scale trends involving governance, population dynamics, and land use, also translate or transmit root causes to the local scale, where they translate to unsafe conditions and fragile livelihoods.

## **Conclusion**

The goal of this chapter was to develop an operational definition, as well as conceptual and analytical frameworks of Institutional Neglect. The frameworks will not only help to draw relevant conclusions for this research but also useful for conducting other disaster or vulnerability studies. Various components and elements that constitute neglect were gathered, organized, and modified for use in the development of the frameworks.

The research generated an operational definition of Institutional Neglect based on a review of existing definitions in fields of child and elder neglect and other works on social vulnerability. The conceptual and analytical frameworks were developed through an extensive literature



review, from both vulnerability and disaster research. The frameworks developed here have broad applicability not only for naturally occurring hazards but to some technological ones. The framework will be used in the analysis in Chapter 8.

# Chapter 4

## Methodological Framework

### Introduction

This research is a case study and adopts a qualitative methodology. This chapter discusses the research methods and accompanying procedures used to gather the data in order to test the validity of the research assumptions. The chapter discusses the characteristics of the study area, sample demographics and size, and the research design and methods. It outlines the various qualitative strategies and processes used for collecting and analyzing the data, including interviews, focus groups, questionnaires, and field observation. For the ease of discussion, this chapter will also restate the research question along with the derived hypotheses that are intended to help generate reliable data about the role of social vulnerability to flooding and to guide subsequent analyses. I will review and briefly discuss how the critical themes obtained from data coding were used to develop indicators of social vulnerability. Other components of the chapter include discussions of ethical considerations, establishing the researcher's positionality as an 'insider' researcher, and the physical, emotional, and material difficulties of fieldwork.

### Study Area

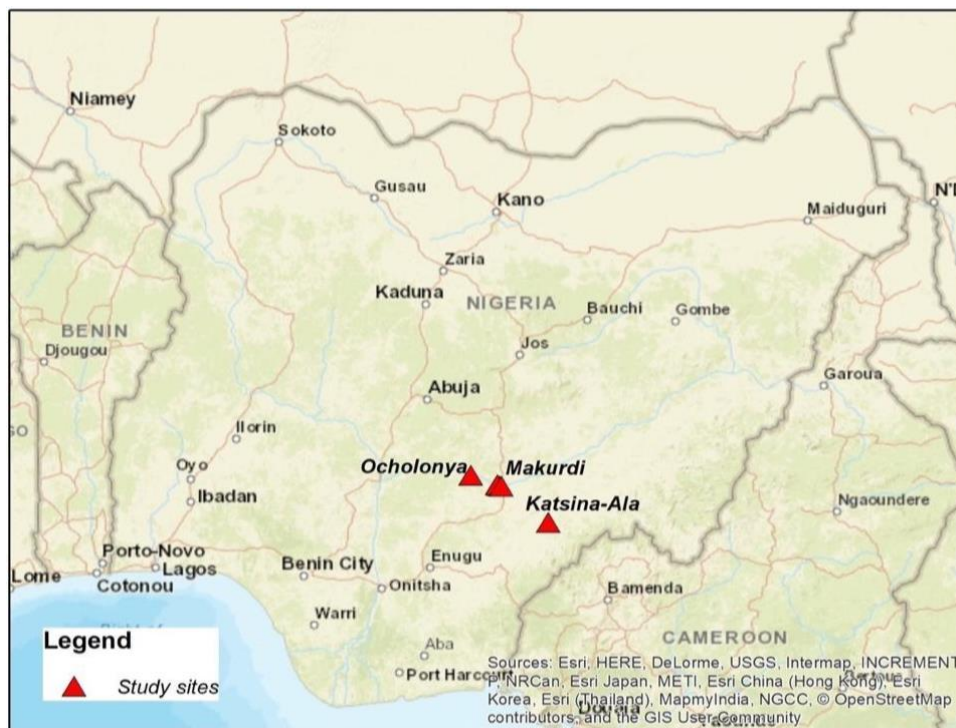
Benue State, Nigeria, is the geographical location of the research. Benue State was one of the states in the country worst hit by the flooding (Agada & Nirupama, 2013; Abah, R. C., 2012; Aderogba, K, A. 2012; NEMA, 2012; OCHA<sup>20</sup>, 2012). The extent of the devastating impacts of

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<sup>20</sup> SITREP RC NIGERIA Floods 01 - 2012-11-06.pdf

the flooding was a key criterion for selecting the specific field locations. Benue State is a region rich in agriculture, and the authorities like to refer to Benue State as the "food basket of the nation." Crop cultivation is the mainstay of the economy, engaging over 75% of the state farming population. Crops grown in the state include potatoes, cassava, soya bean, guinea corn, flax, yams, and beniseed. The state accounts for over 70% of Nigeria's soya bean production. Benue State also boasts of one of the most extended stretches of river systems in the country. The river systems have great potential for supporting a viable fishing industry, dry season farming through irrigation, and an inland water transportation highway.

*Figure 8 Map showing the locations of the research*



Source: Research data 2017

According to national census figures, Benue State had a population of 2,753,077 million in 1991. By 2006, the census figure showed that the population had increased to 4,253,641 million,

with an average population density of 99 persons per square kilometer. The population density makes Benue the 9th most populous state in Nigeria. The research locations for this study consist of five communities in three Local Government Areas (LGAs) in Benue State, Nigeria. The locations comprise communities in Makurdi, Katsina-Ala and Agatu LGAs. In Makurdi, participants were drawn from the Wadata/Rice Mill, Wurukun (Angwan Jukun), and Gyado villa. In the Katsina-Ala LGA, the study area was a locale known as Hausa Quarters, and in the Agatu LGA, the Ocholonya community was the site of the fieldwork. Makurdi has a population of 300,377, Agatu has 115,597 and Katsina-Ala with 225,471.<sup>21</sup> Each of these local government areas has a minimum of ten and a maximum of fifteen wards. Local governments are created by state legislation with the endorsement of the national assembly. All local governments are single-tier, and operationally, there is no difference between them.<sup>22</sup>

I discovered very early in the field research process that qualitative sampling involves more than just making one planning decision at the outset. Qualitative sampling involved making a series of decisions throughout the unfolding process of the research. According to Emmel (2013), reflexive researchers can adjust while considering the implications of sampling on interpretation. As a result of the preparatory footwork done before the commencement of fieldwork, many individuals were available for participation in the research. In the end, the sample comprised 205 men and women, which was higher than I anticipated.

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<sup>21</sup> Source: National Population Commission (Nigeria)

<sup>22</sup> [http:// www.clgf. org. uk/default/assets/File/Country profiles/Nigeria.pdf](http://www.clgf.org.uk/default/assets/File/Country_profiles/Nigeria.pdf)

Table 3 Breakdown of the sampling frame

Sample Type	Communities/Locations/institutions	Sample Size
Flood victims/Individual interviews	Makurdi LGA	
	Wadata/Rice Mill	6
	Wurukun (Angwan Jukun)	6
	Gyado Villa	3
	Katsina- Ala (Hausa Quarters)	4
	Agatu LGA (Ocholonya)	8
Institutional Representative Individual interviews	National Emergency Management Agency (NEMA)	2
	State Emergency Management Agency (SEMA)	1
	Benue State	
	The Federal Ministry of Water Resources	10
	Red Cross	
Flood victims/Focus groups	Agatu LGA (Ocholonya)	12
	Makurdi LGA Wurukun (Angwan Jukun) x2	12
Questionnaires	Wadata	29
	Wurukum	22
	Gyado Villa	17
	Katsina- Ala	31
	Ocholonya	40
Total (sample size) number of respondents		205

A larger sample did not, however, generate a broader range of data. After examining the codes developed from the interviews, focus groups, and questionnaires, the data was returning no new codes. From the 18 codes developed for the study, 16 emerged from the first 55 of the 139 questionnaires. All the 18 codes emerged after the 61st questionnaire. This pattern carried on through the interviews and focus groups. There was a case of data saturation that resulted from a high level of homogeneity of experience among the population. In retrospect, one could conclude that a smaller sample would have sufficiently enabled the development of the same meaningful themes, useful interpretations, and results.

## Research Design

The research design aims to effectively respond to the research question to determine the role of social vulnerability in the flooding events. Robert Yin (2014:23) defines the case study research method as "an empirical inquiry that investigates a contemporary phenomenon within

its real-life context; when the boundaries between phenomenon and context are not evident and in which multiple sources of evidence used." The approach is designed to sufficiently and effectively handle the variety of evidence gathered from the analysis of data gathered from various sources in the research. The case study approach is an excellent method for challenging theoretical assumptions and will be used to test the validity of the social vulnerability framework as a useful tool for understanding disasters.

## **Research Method**

Responding to the research inquiry involves the examination of the underlying socioeconomic and institutional processes that undergird the flooding events. A sweeping statistical survey was ill-suited to address the research question due to the difficulty in quantifying socially created vulnerabilities. This research, therefore, adopts the qualitative method of inquiry to explore the flooding phenomenon. Qualitative studies often use an analytical framework consisting of a network of linked concepts and classifications to understand the underlying processes of a series of events and how they relate to one another (Sutter, 2012:344). The goal of qualitative data analysis is to uncover emerging themes, patterns, concepts, insights, and understandings (Patton, 2002). While this method is well-suited to conducting vulnerability studies and aligns well with this research approach, a simple descriptive statistical analysis, including the use of charts and graphs, will complement the qualitative analysis and provide a more robust understanding of the results.

Sources of qualitative data employed by the research include interviews, administration of questionnaires, focus groups, and field observations (Patton, 2002; Yin, 2003: 8). These methods provide an opportunity to capture different firsthand accounts and emerging essential details, often left out by other approaches. Interviews and focus groups are mainly useful when seeking a

complete response and are most likely to provide a depth of relevant information. These methods are also the best for resolving seemingly conflicting information because the researcher has the right opportunity to ask about the apparent conflict in narratives. Finally, interviews and focus groups are essential for revealing significant emotional content that can open the words of participants.

### **Engaging the field of qualitative research**

The success of any research is defined, to a great extent, by the methods employed. The nature and scope of the research were such that assistance was required. To effectively tackle the tasks involved in the field, I first recruited John Jacobs, a resident of Makurdi, with good knowledge of the three study locations in the Makurdi LGA as a research assistant. The second person brought on board was James Iorhuna, another Makurdi resident who had experience working with the State Emergency Management Agency. James had worked in different areas of disaster management during the 2012 flooding event, including the resettlement of flood victims. James was especially valuable in providing background information about the event and flood victims and handling most of the logistics of the fieldwork. Finally, Godwin Adegbe, who helped navigate the sometimes-treacherous terrain we faced as we drove between locations and later provided logistical support joined the group. These three were invaluable resources to the fieldwork.

While fieldwork ensued from June 2017, arrangements for interviews, focus groups, and survey/questionnaire administration were completed by April 2017 by my field assistants John Jacob, James Iorhuna, and Godwin Adegbe. I forwarded the relevant information to my three assistants in order to familiarize them with my research. After several consultations through email, phone, and video conferencing, we agreed to the research locations. I asked John and

James to visit the locations, talk to victims of flooding, and seek their willingness to participate. We tentatively confirmed the number of participants for interviews, focus groups, and questionnaire administration. John distributed the questionnaire by the end of April 2017 and reminded participants to complete them and get them ready for retrieval between one to two weeks. I arrived in Nigeria in May 2017 to begin fieldwork.

## **Data Collection Procedures**

Consistent with the case study methodology, fieldwork in this research includes the collection of both primary and secondary data through qualitative methods. The procedure for collecting data was painstaking and scrupulous. Stringent precautions were taken to ensure that the process of collecting primary data was air-tight and extensive.

### **Secondary Data**

The bulk of work in the field centered on the collection of primary data. However, the first step in data collection for the study involved the examination of textual archival materials, existing records in government institutions, as well as scholastic materials at university/college libraries in notable Canadian and Nigerian institutions, including York University, University of Toronto and Benue State University, Nigeria. Materials from these sources aided a comprehensive examination of textual materials during the literature review. They also helped in shaping the focus on the fundamental assumptions that guided the research, including those about critical concepts such as social vulnerability. In particular, the Department of Geography at Benue University in Makurdi was very helpful in providing access to work on various aspects related to flooding in Benue State. I learned that during earlier visits to the school, the Department of Geography was actively involved in the flooding crisis in Benue State. I wrote and requested a meeting with the Head of the Department of Geography, which he graciously



obliged. I met with him and some faculty members and spoke about my research before we had a general conversation about flooding in Benue State and the type of academic work in progress. They provided constructive insights, advice, and academic materials, which were very helpful to the study.

The Federal Ministry of Water Resources and the national and state offices of the NEMA also provided valuable data relevant to the research. I had interned with the NEMA in 2013, so I had already established a rapport with some of the staff. The relationship aided access to the organization and its resources.

### **Primary Data**

Primary data collection is an essential piece of this study. The second step in data gathering involved data collection from primary sources, which included individual interviews and questionnaires. Open-ended questions were asked to encourage comprehensive and individualized answers from the participants. The interviews, focus groups, and questionnaires used the same set of questions that target flooding victims. The interviews, focus groups, and questionnaires all used a semi-structured questionnaire protocol. Individual interviews and focus groups were all digitally recorded.

### **Interviews**

Interviews are discussions meant to gather information on a specific set of topics, usually between an interviewer and an individual. Interviews are conducted in person or over the phone. In this study, I identified and selected two groups of individuals for interviews. First were the victims of the flooding. The second group consisted of four government officials, two from the Nigerian Emergency Management Agency (NEMA) and two from the State Emergency Management Agency (SEMA). A senior official from the Federal Ministry of Water Resources

was interviewed by phone. I sent a letter introducing my research on York University letterhead to request for interviews. The Ministry of Environment, the national office of the Nigerian Red Cross and the office of the Cameroonian High Commission in Nigeria were also approached but did not respond to the interview requests

The individual interviews provided a means of accessing the narrative accounts of the flood victims' lived experiences and the impact of the flood on them. Data gathered here related to the temporal, spatial, and social context of the lives of the victims and provided valuable insight for my dissertation. Life-history interviews were conducted with the flood victims because over 70% of the participants lived on ancestral land or have lived in the same location for about ten years. Out of the five locations in this study, three were communities that had occupied lands dating back hundreds of years. These were the Ocholonya community in Agatu Local Government Area, the Angwan Jukun community in the Wurukum, Makurdi Local Government Area, and the Hausa Quarters community in the Katsina-Ala Local Government Area.

Purposeful sampling was used to select interview participants from the pool of flood victims, created from a list of the most affected areas and individuals contained in a report provided by the SEMA (State Emergency Management Agency) on the 2012 flooding. In Wadata/Rice Mill in Makurdi, the selection involved gaining the cooperation of community leaders. The involvement of the community leaders gave legitimacy to the exercise in the eyes of the participants. Cooperating with the community leaders also encouraged a willingness to participate on the part of the participants.

The individual interviews included six people in Wadata/Rice Mill and Wurukum, eight in Ocholonya, four in Hausa Quarters, and three in Gyado Villa. In Wadata/Rice Mill, two of the six participants were men, and four were women. It was similar in Wurukum; four of the

participants were men, and two were women. In Ocholonya and Hausa Quarters, all the participants were men.

In Wadata, the interviews with the four men happened in their homes. The interviews with the women took place at the Rice Mill, where they all work. They did not own any stalls, so we sat in the open for the interviews. Three of the men spoke Idoma, which is my native language, so interpretation was not required. The fourth man spoke English, so again, interpretation was not required. One of two women also spoke Idoma; however, the second woman spoke Tiv, another language spoken in Benue State, so James (my field assistant) translated to English. In Ocholonya, Hausa Quarters, Gyado Villa, and Wurukum, all the participants were interviewed in their homes. Participants in Gyado Villa and Hausa Quarters spoke broken English, so minimal interpretation was required. In Ocholonya and Wurukum, the participants and I communicated in Idoma. Enough time and flexibility were given to the participants to complete their stories in an atmosphere where they felt safe and respected. The interviews with the flood victims took between 30 and 40 minutes.

The last sets of interviews were conducted with officials at the National Emergency Management Agency (NEMA) office in Abuja while the ones with the staff of the State Emergency Management Agency (SEMA) occurred at their office in Makurdi. The participants at both NEMA and SEMA were men; two NEMA officials at the Federal Capital Territory office in Abuja received structured interviews. A set of questions previously developed was adhered to during the interview. Two semi-structured interviews were with two field workers at the state office in Makurdi. The two groups answered the same interview questions. However, in the follow-up questions, the SEMA staff were encouraged to focus more on their field roles as it

related to the flooding. Interviews with NEMA and SEMA officials took approximately one hour.

### **Focus groups**

The focus group is a research methodology that brings participants together to discuss topics of mutual interest. It is an unstructured way of collecting data where participants have a much higher degree of control in discussions (Bosco & Herman, 2010: 11). Kidd & Parshall (2000) suggest at least three focus groups to obtain authenticated or verified knowledge. My study held a total of three focus groups at two of the research locations. One was in the Ocholonya community and the other two in Wurukum. The focus group in Ocholonya had 12 participants, and the two focus groups conducted in Wurukum had a total of six each. The focus groups were also useful in obtaining detailed information about personal and group feelings, perceptions, and opinions about the flooding. They indeed provided the opportunity to verify and seek clarification about individual interviews and, as well, broaden the range of information collected. The focus groups took approximately 1 - 1½ hours.

Aitken, Stuart, & Herman (2009:17) propose that in order to uncover a group viewpoint, a focus group should be quite homogeneous with factors which the researcher believes might affect the attitudes expressed, or types of experiences recounted such as gender, age, social class. From observation, the distribution of the impacts of the flooding among the population was evenly spread. I, therefore, decided not to make gender disparity an immediate matter of concern. The distribution of the impact of lack of access to social and physical infrastructures was even across the board, so a demographic breakdown of who was most impacted was unnecessary.

However, an observation in one of the focus groups at the Wurukum location, where two of the six participants were women, revealed some gender dynamics. In an earlier interaction with

one of the women, she appeared very self-assured and confident. She rallied the other participants to her house before we all walked over to the community leader's home for the focus group. The second woman, who was her neighbor, was a little reserved but was responsive enough. So, before the focus group, the interaction between the men and women did not raise any concerns about gender disparity and how it may impact the data. During the focus group, however, I observed that the men dominated the discussions, and although the women were not married to any of them, they still deferred to the men when answering questions. Culturally, it was the case that women show deference to men in general and their spouses. There was no indication that the women acted for reasons other than a response to patriarchal cultural practices that privilege men and expect women to show deference to the man, particularly in a local group setting such as the focus group. In the end I determined from the overall discussions that all were equally represented as everyone reinforced each other's story.

Another notable observation of the focus groups was the formation of social bonds, not only amongst the participants but also between the participants and I. Bosco, F. & Herman, T. (2010) expressed concern that the participants may feel "used" or "abandoned" at the end of the process after the researcher left and the participants dispersed. In this case, the social bonds that emerged out of the focus groups persisted. I characterize this bond as a 'continuity of engagement.' Rather than come to an abrupt end, the 'continuity of engagement' allows for communication between participants and I, to slowly come to a satisfactory conclusion. The participants and I had a positive social bonding experience and found our time together usefully spent, It only meets the minimum ethical standards for researching the communities. I fell short of my personal goals of giving back to these communities that contributed immensely to my research. To reciprocate the goodwill of the communities, I resolved to give time and resources to support any causes that

they may have for themselves and their communities. They stated that they hoped that I would help them call the government's attention to the plights of the Wurukum community about an abandoned World Bank drainage project that continued to intensify the problem of flooding in the community for over a decade. This World Bank drainage initiative was abruptly terminated, which created additional exposure of this community to the menace of flooding. The World Bank drainage initiative had significant relevance for this research as it reinforces the Institutional Neglect argument. I committed to working with them on seeking a resolution to the problem. We have remained in contact since the end of the fieldwork. More time will be devoted to the cause at the end of the dissertation.

As Bosco & Herman (2010: 13) note "our authorial caution and care, in how we represent the research we have done and the insight we have gained from it, do not alone help us to make more out of those wonderful opportunities; we have to be engaged in conversations with the very people we find interesting enough to write about." Part of the 'continuity of engagement' will not only provide feedback from the research results to participants about the knowledge they helped create but also make sure that any positive results from the research can benefit the communities.

### **Questionnaires**

Initially, Makurdi was the only Local Government Area selected for the administration of questionnaires to victims of flooding and staff of the state Red Cross. However, in Ocholonya, more people were available to participate. We could not possibly do individual interviews for all of them. Therefore, questionnaires were administered verbally with the two research assistants documenting responses for the participants who could not read and write. The questionnaire posed only a small respondent burden, and on average, took 20 - 25 minutes for respondents to answer all the questions.

The Red Cross is a non-governmental humanitarian organization that played a role in the 2012 flood event. The goal was to corroborate the accounts of the flooding from the Red Cross staff, the Nigerian government officials, and the flood victims. It is often the case that in the event of this type of disaster, the government and the victims have divergent views of the event and are often at odds in their narratives of it. The staff of the Red Cross, though stakeholders in the flooding crisis, would provide a more neutral view of the event and of the assessment of the general response to the event. Purposeful sampling was the method used to recruit this group of participants. Following approval from the Administrative Officer at the Red Cross, the staff received the questionnaires. The distribution of questionnaires occurred well ahead of the start of fieldwork to give participants ample time to complete them. Five trips were made to retrieve all completed questionnaires.

### **Processing the Qualitative Data**

Data processing started with the verbatim transcription of interviews, focus groups, and relevant sections of video recordings. Field notes compiled during the interviews and focus groups were used to complement and corroborate these sources of information. Following the transcription and verification of the data, coding, and theming ensued. The entire process of making sense of qualitative data requires creativity. Patterns and themes among complex data usually do not just pop up. However, the challenge is minimized by following some suggestions provided by Patton (2002: 514 – 544). He encourages being open to different possibilities or ways of thinking about the research problem, engaging in "mental excursions" using multiple stimuli such as "side-tracking" or "zigzagging", changing patterns of thinking, making linkages between the "seemingly unconnected" and "playing at it" all with the intention of "opening the world to us in some way".

I analyzed data from each of the sources described above by coding transcripts, documents, and notes from observations. A systematic coding method was used to analyze all data following the coded-key word approach (Rabiee, 2004). A code/keyword was attached to phrases or comments to help identify themes within the text. Coding set the stage for systematic analysis of data. Topics, issues, similarities, and differences revealed through the participants' narratives were identified and interpreted. Quotations from individual transcripts were used to illustrate the source of the interpretations. Coding was done by hand on a hard copy of the transcript and then inputted into Microsoft Word and Excel for compilation.

Since the study regards social vulnerability to flooding, only data gathered from flood victims went through coding. Data from SEMA, NEMA, Red Cross and the Federal Ministry of Water Resources required only transcription and analysis but not coding.

### **Restating the research question and hypothesis**

How is social vulnerability, as a function of institutional neglect, an outcome of socioeconomic fragility, and overall precarious livelihood, which creates exposure to the risks of flooding in Benue State, Nigeria?

The following four hypotheses will guide the research. The research questions and the supporting hypotheses will help determine the function of social vulnerability in the flooding.

Hypothesis 1: Social vulnerability arises from events that happened in the past as well as the circumstances of everyday living.

Hypothesis 2: Social vulnerability is linked to Institutional Neglect, which creates conditions of socioeconomic fragility and overall precarious livelihood, including poverty, access to social, physical/structural, and institutional resources. These factors mutually reinforce one another.



Hypothesis 3: Viable institutions are crucial to building resilience to flooding hazards because vulnerable people have little control over their circumstances and are mostly dependent on the will or prerogative of the government.

Hypothesis 4: The power of government exists to minimize the threats and risks that individuals face; therefore, the government has a critical role in providing both physical and social infrastructure that protects people and helps them build resilience to the threats of hazard.

### **Assessing and operationalizing social vulnerability**

Social vulnerability describes those characteristics of the population that influence the community's capacity to prepare for, respond to, and recover from disasters (Cannon, 1994; Yoon, 2012). To establish the role of social vulnerability in the flooding incidents in Benue State involves determining the factors that constitute social vulnerability. The first step in this process is to identify the variables or components which constitute social vulnerability. A significant challenge to conducting vulnerability research is how to determine and quantify the components of vulnerability. This challenge has received considerable attention in the field of disaster vulnerability research and calls for the development of a consistent set of metrics to assess and measure vulnerability to natural hazards continue (Comfort et al., 1999, Cutter, 2001, Cutter, 2003). In some studies, social vulnerability is viewed as partially a consequence of social inequalities produced by structural factors and identify variables such as poverty, racism, illiteracy, age, race, income, employment, which influence people's susceptibility to harm and their ability to respond (Cutter, 2003). In other studies, variables of social vulnerability include the characteristics of the built-in environment, such as growth rates, economic vitality, and urbanization, all of which contribute to the social vulnerability of places.

Table 3 represents a list of social vulnerability variables developed from the data for the research. Vulnerability research in developed countries often generates a broad range of variables; this ability to generate a broader range of variables is a result of the availability of both resources and data. Although the variables for this research were from a comparatively narrow scope of the data, they still have broader utility, and the variables applicable to other research with similar context.

*Table 4 Table of social vulnerability variables*

Number of Variables	Description
POCCP-TYPE	fishing and/or farming occupation
PERCAP	per capita income (in dollars)
PHHLD-INCM	household income- below \$60.00/m
PPOVTY	% living in poverty
PLEVL-ED	%without education (high school)
PRSKPCPTN	%Without risk perception
PEMPLYNT	%unemployed
PLNGTRES	%Less than 10/years in location
PRLCTN	%not able to relocate
PNLSVNG	%without personal saving
PPRPRDNS	%not prepared
MMR-DSTR	%experience of multiple flood events
FMLYNTWK	%without family support
PMNSCOMM	%without cell phone, other
SRCFINFO	% without radio, TV, word of mouth
PFLDINFO	%without flood info- formal, traditional
PPUBTRANS	% without access to personal/public transportation
PPOLPTCPTN	% without political participation-voting
PHSNGQUA	% mud/thatch, cement/corrugated houses
PLN&DSGN	% poor/absence of drainage system
PPRX-HZD	% proximity to hazard
PFLDPLN	% living % living on floodplains
PRLYWNNNG	%without early warning
PSHLTR	%without access to shelter
PEVCTN	% without access to evacuation
PPRELIEF	% without access to relief funds/materials

## Developing Social Vulnerability Indicators

The assessment of social vulnerability qualitatively requires the development of indicators to reflect the identified variables. The identification and development of social vulnerability indicators help to measure and record variations of vulnerability and to gain a picture of the social conditions in which people live. The final declaration of the World Conference on Disaster Reduction (WCDR) in Kobe, Japan in 2005, emphasized the importance of developing

vulnerability indicators in order to enable decision-makers to assess the impact of disasters (Hyogo Framework for Action 2005-2015, UN 2005).<sup>23</sup>

While there is disagreement about which variables contribute to social vulnerability, there is general agreement within the social science community regarding some of the major factors or indicators that influence social vulnerability (Cutter et al., 2003). Some broad indicators of vulnerability that have appeared repeatedly in the vulnerability assessment literature include poverty, education, lack of access to resources such as information, knowledge, and technology; limited access to political power and representation; social capital including social networks and connections; building stock; and type and density of infrastructure (Wisner et al., 2004; Yoon, 20012). Birkmann (2013:16) notes that the challenge of developing a balanced approach to understanding social vulnerability to a disaster lies in the ability to combine both the general context, including the macro indicators and more precise and specific indicators. This study responds to this challenge by using these existing macro vulnerability indicators as a guide to generate five indicators of vulnerability to flooding from the variables in table 4. Generating the indicators from the variables required several rounds of analysis to fine-tune the data by eliminating redundant variables and combining those that fall within the same categories. Table 4 shows the generated indicators.

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<sup>23</sup> <https://www.unisdr.org/we/inform/publications/1037>

*Table 5 Table of Social vulnerability indicators*

Poverty/Socio-Economic Status
Isolation/Marginalization of Rural Communities Social Capital: Inter-Personal/social networks
Lack of Social/Physical Infrastructure Human/Personal Capital (Low Human Development Index)
Failure of Institutional Infrastructure Access to Resources (social and physical infrastructures)
Proximity to the source of hazard (inability to relocate)

The development of these social vulnerability indicators is a significant step in the research.

They represent the factors that influence vulnerability to the risks of flooding. It is the position of the research that they have their origin in Institutional Neglect. The Institutional Neglect analytical framework developed in Chapter 2, will be used to analyze these indicators and structure the overall discussions in Chapter 7.

## **Ethical Considerations**

Ethical concerns are essential to planning, conducting, and evaluating research. This research was reviewed and approved for compliance with research ethics protocols by the Human Participants Review Subcommittee (HPRC) at York University. Participants were informed of their right not to participate or to withdraw from the process at any time voluntarily. Participants were also informed that data and their identities during and after the research would be kept confidential. Informed consent forms were signed individually, even in the case of the focus groups. The research presented a minimal risk to participants, and the probability and

magnitude of harm or discomfort in the research were not more significant than any ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

Facilitation of the individual interviews and focus groups in the traditional communities required the approval of the community leaders for access to the participants. For example, in the case of the Ocholonya community, we had to go through three levels of vetting by leadership before conducting the interviews and focus groups. The Wadata and Gyado Villa locations in Makurdi LGA did not require the same level of vetting for two reasons. First, unlike Ocholonya, Wurukum, and Hausa Quarter, participants in Wadata and Gyado Villa have no ancestral/historical tie to the locations and, therefore, did not have a recognized community leader. Secondly, Makurdi, which is the location of these sites, is a state capital. It is the hub of the state and attracts migration into the city from the rural area because of improved technology, decreased need for agricultural workers owing to improved technology, and, most importantly, the possibility of better economic opportunities. The participants here showed independence from one another. Although they did share a bond, it was not from a common ancestral heritage that would compel them to act as a unit where a collective approval was required for any form of civic engagement if one desired.

### **Background, Positionality, and Biases**

Bias in a qualitative study is always a concern. Every researcher brings their unique perspective that inevitably makes some difference to the research. Therefore, it is critical to clarify my role in order not to compromise my research credibility, particularly as I am utilizing qualitative methodology. As a Nigerian citizen from Benue State, I am an 'insider.' The debate on insider/outsider standpoints has been a long-standing one and prominent in sociological and

feminist writings, especially those concerned with qualitative research methodology and epistemology. It is an epistemological principle centered on the issue of access. Acker (2000) provides an excellent review of this debate.

Early feminism celebrated the merits of 'insider' research. According to this perspective, studying one's group not only privileges the researcher to draw from their knowledge of that group to gain deeper insights into the opinions and experiences of the participants but simultaneously places the researcher and the research subjects on relatively equal footing, which reduces the likelihood of exploitative power relationships. In the 'insider' research, the interview method ideally becomes a mutually reinforcing process where the researcher and research subjects establish common understandings based on shared background knowledge and practice (Damaris, 2001:24). However, Unluer (2012:1) cautions that too much familiarity can lead to a loss of objectivity and the formation of incorrect assumptions based on the researcher's prior knowledge, which can be evidence of bias.

It would be naïve on my part to imagine that the codes and themes which emerged from the sources of data are entirely devoid of my perspective. Like the other research processes, my voice and positionality are intermingled and intertwined with the research. However, as a researcher who shares cultural, linguistic and ethnic identities with most of my informants, I recognized that I had a responsibility to negotiate objectivity and accuracy throughout the research, with the same rigor as any other researcher, whether I had more access to the research field or not. The 'insider' advantages are not absolute, and I was keenly aware of ethical and methodological dilemmas associated with entering the field, including positioning and disengagement.

I exercised a healthy self-reflexivity to guard against "confirmation bias," " which seeks out evidence that supports the researcher's initial conclusion or personal view while also filtering other data (Sutter, 2012:351). Self-reflexivity helped me reconcile my motivations for conducting research and the extent of the accountability I owe to the participants. My 'insider' perspectives provided me with an understanding of the complexity of the flooding phenomenon and the ability to consider the multiple realities experienced by the participants. The quest for objectivity often undermines or ignores the enormous advantage for both participants and researchers of having researchers conduct studies within their communities. The research findings are an accurate representation of the narratives and perspectives shared by the participants.

### **Challenges/Limiting Conditions**

It is normal to anticipate challenges in any research. Knowledge and familiarity with the people, language, and culture of the area helped with the overall research. However, there were still many contours in the process that created considerable difficulties and discomfort. First and foremost was the lack of availability of existing data on flooding in Benue State, especially ones related to social vulnerability. A vital component of any vulnerability assessment is the acquisition of systematic baseline data, particularly at the local level. These data provide inventories of hazard areas and vulnerable populations, damage assessments, and post-disaster response. The availability of data is also crucial to the processes of assessing and measuring vulnerability, especially to the selections of indicators of social vulnerability (Tapsell et al., 2010; Yoon, 2012) and the development of the Social Vulnerability Index (SoVI). The SoVI relies predominantly on public statistical information such as the census. Even when the information was public, getting the related agencies to confirm the veracity of such information

was very difficult. The officials who could corroborate information expected some reward, often in the form of bribes.

Another challenge was the physical accessibility of the locations of the study. I was stationed in Otukpo, which was about three hours from Ocholonya, two and a half hours from Makurdi and four hours from Katsina-Ala. There is a highway east connecting Otukpo to Makurdi and another connecting Makurdi to Katsina-Ala, but they are littered with large broken patches and potholes, making for challenging trips. The conditions of the highways often turned a one-hour trip into two and a half hours and a two-hour trip to four. Three of the five study locations, namely Wadata, Wurukum, and Gyado Villa, are in Makurdi. Access to roads within Makurdi was good, which made for relatively easy access to these locations.

The Ocholonya community presented the most significant challenge concerning accessibility. The challenge of accessibility was worse because fieldwork occurred during the rainy season. We could only drive part of the way in attempting to reach the community. Two-thirds of the way into our journey, my two field assistants (one doubling as the driver) and I learned that we could not drive anymore because the path was not drivable. We made the rest of the journey on motorcycles, the only means of commercial transportation in the area. We got in and out of the village by using the motorcycle.

Preliminary investigation in the research shows that, in the 2012 flooding, one of the factors was the release of water from the Lagdo Dam in Cameroon. Nigeria is downstream from Cameroon, and it is often the case that when there was heavy rainfall, the excess water flows downstream to Nigeria and results in flooding in the areas which lie in the path of the water, including Benue State. In 1980, Nigeria and Cameroon agreed that each country would build a dam to contain excess water during heavy rainfall, thereby tackling the problem of flooding.



While Cameroon went ahead and built a dam, Nigeria is yet to build its own. So, in the event of heavy rainfall, when the Lagdo dam reaches the maximum, to prevent or minimize flooding in its state, Cameroon would release water from the dam, which would flow downstream to Nigeria and cause flooding. The failure to honor the agreement and build a dam to control flooding in its state by the Nigerian government contributed to the 2012 flooding. In conceiving the research, the release of water from Cameroon loomed large as a starting point to understanding the role of social vulnerability to the flooding in Benue State. However, I received credible information about security issues relating to increasing Boko-Haran activities between Nigeria and Cameroon. The risk was too high, and I decided against travelling to Cameroon. Therefore, I scaled down the emphasis on collecting primary data from Cameroon and instead broadened data collection within Nigeria. The change had no negative impact on the integrity of the research. The data from Cameroon was only to broaden the argument for Institutional Neglect. Data obtained solely in Nigeria sufficiently makes a case for Institutional Neglect being the origin of social vulnerability to the threats of flooding in Benue State.

Finally, the emotional toll of gathering reliable, valid, and compelling primary data was enormous. At times, it was hard to separate from the desperation and despair of the participants. The desperation and despair were most evident in Ocholonya. The levels of Institutional Neglect and the abject helplessness of people were jarring. Ocholonya was the worst impacted of all the communities, and it was the least developed. It had no access road, no hospital, and no school (the only school was destroyed by a prolonged cattle herdsman conflict that was taking place there). The plan was to conduct one focus group with the community leaders together with selected participants and then have individual interviews with eight other participants. When we got to the village, most of the villagers had gone to their farms for work, even of the ones we

earlier contacted for participation. At the time we were rounding up the focus group, they had begun to return. The news went through the village very quickly that we were investigating the circumstances of the 2012 flooding. It was not immediately apparent at the time what was happening, but it appeared that everyone was turning up at the place we were holding the interviews, and I became alarmed that perhaps they thought we had brought help. I quickly took steps to restate the purpose of the exercise and that there was no compensation. They stated that they understood but still wanted to participate and tell their stories.

In most communities, I observed and heard stories of suffering, neglect, and abject poverty. People stated that they have no recourse to their situations and felt a chasm between themselves and their government. In many instances, I reminded myself that the 2012 flooding event was the target of inquiry. Maintaining a focus on the 2012 flooding was difficult because more flooding has continued to devastate the communities since the 2012 flooding, although in a lesser magnitude. The victims told stories of the challenges of not having the necessary infrastructure and resources to lessen the impact of the flood. One of the SEMA participants stated how relief materials never reached the designated destinations and how those responsible for distributing relief materials misappropriated them without reprobation or consequence. The suffering of the flood victims was palpable. The weight of the fear, pain, despair, resignation, and sometimes anger contained in their stories remain with me. My research assistant's voice telling me at Ocholonya to "do something about this" continues to haunt me.

## **Conclusion**

The goal of this chapter was to present the research methodology. It presents in detail the steps taken in conducting the research. The chapter presents the study area, sample demographics and size, and the research design and methods. It defined the research as a case study and

outlined the various qualitative strategies and steps used for collecting and processing data, including interviews, focus groups, questionnaire administration, and personal observation. This chapter also addresses ethical considerations, my positionality as an 'insider' researcher and the physical, emotional, and material difficulties of fieldwork.

The analysis of the data draws support for the assumptions of the research. The analysis involves the use of critical themes mined from the data to develop the social vulnerability variables and, subsequently, the indicators of social vulnerability. These steps move the research towards the establishment of concrete findings and their analysis in subsequent chapters. Essentially, this chapter sets the stage for the establishment and measurement of social vulnerability to flooding that ensues in Chapter 5. The social vulnerability indicators and the factors of Institutional Neglect are used to structure the overall analysis of the findings of the research in Chapters 6 and 7.

# Chapter 5

## Research Results and Analysis

### Introduction

The argument which drives this research is that the 2012 flooding in Benue State, Nigeria, was the outcome of social vulnerability, influenced by Institutional Neglect. Various institutional processes created conditions of precarious livelihood and a low degree of social and self-protection to make the disaster happen. These conditions defined the overall context of how the communities experienced and responded to the flooding event. However, the research also acknowledges that physical vulnerability plays an organic, foundational role in disaster processes. As mentioned during the development of the conceptual and analytical frameworks in Chapter 3, the research takes both the physical and social aspects of the flooding into consideration. Incorporating both the social and physical properties of the flooding facilitates an all-hazards vulnerability assessment. An all-hazards approach is an integrated approach to emergency preparedness planning. It focuses on capacities and capabilities that are critical to preparedness for a full spectrum of disasters, including disasters occurring from natural or man-made hazards. The all-hazards assessment addresses the criticism that the concept of social vulnerability focuses exclusively on the economic aspects of vulnerability.

The chapter is divided into two sections. The first section seeks to establish the role of social vulnerability and to measure the degree of its impact on the flooding disaster. The ability to measure vulnerability is a crucial step towards effective risk management and the promotion of a culture of disaster resilience (Birkmann, 2004). Since the analysis in the chapter is based on socio-demographic features of the research locations, the results will establish if, indeed, social vulnerability influenced the flooding.

The second section focuses on those physical properties of the research locations that contribute to creating physical vulnerability. Physical exposure or physical vulnerability arises when people reside in areas that are susceptible to the threats of some natural hazards such as floodplains or coastal zones, which sometimes only extend a few feet beyond the floodway. Understanding the role of proximity to the source of hazard plays in a disaster is essential because social vulnerability in this research is a combined function of social and physical vulnerability. After all, if there were no flood hazard, there would be no disaster.

## **Section 1**

### **Assessing social vulnerability**

The first step in assessing social vulnerability is the construction of a Social Vulnerability Index (SoVI). Although the SoVI is currently one of the most popular tools for analyzing and understanding the complex and multi-dimensional nature of social vulnerability to natural hazards or disaster, the idea of constructing a vulnerability index started in the arena of development discourse during the conference on the Small States held in Malta in 1985. It garnered more considerable attention towards the end 1980s and even more in the 1990s when a meeting of Government Experts of Island Developing Countries and Donor Countries and Organizations, convened under the auspices of UNCTAD (United Nations Conference on Trade and Development), "highlighted the important role of a vulnerability index in capturing structural and institutional parameters not reflected in assessments of development based on GDP per capita" (St. Bernard, 2004: 2). The vulnerability concept has since then been in use for close to five decades, especially across disaster management, development, economics, sociology, anthropology, geography, health, global change, and environmental studies (Bergstrand et al., 2015; Cutter, 1996; Timmerman, 1981; O'Keefe et al., 1976). A review of the vulnerability

literature reveals that there are two primary methods for assessing social vulnerability: (i) a deductive approach based on a theoretical understanding of relationships and (ii) an inductive approach based on the identification of statistical relationships (Yoon, 2012; Adger et al., 2004).

### **Deductive approach**

The deductive approach selects a limited number of variables to deductively generate the SoVI based on a priori theory and knowledge from the existing literature (Yoon, 2012: 825). Notably, Cutter et al., 2000; Wu et al., 2002; Chakraborty et al., 2005; Zahran et al., 2008 have all employed this approach.

### **Inductive approach**

To inductively assess social vulnerability requires the creation of a systematic SoVI using extensive sets of variables that influence social vulnerability (Yoon, 2012; Cutter et al., 2003). Although the inductive approach is similar to the deductive approach in that they both select variables from the existing vulnerability literature, a notable difference is that the inductive approach, as a starting point, includes all possible variables mentioned in the literature to assess social vulnerability. For example, Cutter et al. (2003) composed a set of 85 variables of social vulnerability from an extensive analysis of the pool of vulnerability literature. From this, she normalized a set of 42 variables in statistical analysis to measure social vulnerability for over 3,000 counties in the United States in 1990. Other researchers who have borrowed Cutter's SoVI (SoVI) to examine social vulnerability include Yoon (2012), Fekete (2009), Myers et al. (2008), Azar, and Rain (2007), Rygel et al. (2006).

## **Generating the SoVI for flooding in Benue State**

This study adopts, with some modification, the deductive approach to creating the SoVI. The requirement to select variables from existing studies in order to produce a SoVI was challenging. It became evident very quickly that this approach does not take into consideration the context-specific nature of social vulnerability and that existing variables may not sufficiently capture the vulnerabilities in all study locales and settings, or that existing variables may altogether not even be relevant. According to Jones & Andrey (2007), Rygel et al., (2006) and Adger et al. (2004), vulnerability is geographically and socially differentiated, in that it may vary with place and maybe assessed differently in different geographical settings. Even when variables are the same in two different studies, they may not mean the same thing or carry the same weight. For example, while in this research, living below the poverty line in Nigeria meant living below the minimum wage of N18,000.00 (naira) (\$60.00) a month, the U.S. Census Bureau Poverty Thresholds for one person (unrelated individual) for 2015 was \$12,082 which is approximately \$1000.00 a month, equivalent of approximately N35,000.00 a month. Similarly, while 'self-help', in time of natural hazard emergency in developed countries is 'the exercise of personal responsibility and neighborly concern that is a superior substitute for government intervention,' in this research 'self-help' is the only and one desperate option for many individuals in the event of a natural hazard. According to Adger et al. (2004), we must exercise caution in applying uniform weightings or proxies across countries. The variables selected here represent the characteristics of social vulnerability specific to the study locations in Nigeria.

Social vulnerability variables were selected directly from the research data to generate the SoVI, which is consistent with the deductive approach. The research also employed variables from the original 42 variables used by Cutter et al. (2003) and Yoon (2012). In this way, a

comprehensive analysis of the social vulnerability of the flooding was made possible. Yoon (2012) notes that the social vulnerability variables serve the needs of the individual researcher in different ways to answer their research questions and test their concepts. Variables represented the themes that emerged from coding. Table 5 shows the relationship between the indicators and the variables and their sources.

**Table 6 Indicators, associated variables and their sources**

Indicator	Variable names	Variables	Source
Poverty/Socio-Economic Status	POCCP-TYP PYRES PERCAP PHHLD-INCM	Occupation (%fishing and farming) %residing less than 10/years % Per capita income (in dollars) %household income	Fieldwork 2017  Cutter (2003)
Institutional Infrastructure Access to Resources (social and physical infrastructures)	PLVEDCT PELYWRN PSHLTR PEVCTN PPRELJEF PINFRAS MDCLFAC	%Education (high school) %Access to early warning % Access to shelter %Access to evacuation %Access to relief funds/materials %Access to other communities- infrastructure %Access to medical facility/personnel	Fieldwork 2017  Cutter (2003)
Human/Personal Capital (Human Development Index)	PMNSCOMM PRLCTN PPRPRDNS PRPCPTNS PFLDINFO	%means of communication %relocate- ancestral/economic/no option % Preparedness %Risk perception %Flood information	Fieldwork 2017  Cutter (2003)
Isolation/Marginalization of Rural Communities Social Capital: Inter-Personal/social networks	PFEXPRCE PPUBTRANS PMMR-DSTR PFMLYNTWK PRSKPCPTN PSRCFINFO PRLCTN	% No. of floods experienced %Access to personal/public transportation %Shared experience of flooding %Number in family/family support % Information receiving tools-Cell phone, Radio, TV, word of mouth % Flood info- formal, traditional % Voting	Fieldwork 2017  Cutter (2003)
Geophysical properties and human intervention/ modification activities	PHSNGQUA PFLDPLN PTPLN&DSGN	%Mud/thatch, cement/corrugated iron sheets % Living on the floodplain Town planning and design- Poor/absence of drainage system (dumping of debris into drainage systems, construction on drainage facilities, violation of local building codes.	Fieldwork 2017  Cutter (2003)

Fieldwork 2017, Cutter (2003)

Researchers who select social vulnerability variables deductively, as is the case with this research, need to standardize those variables before combining them into a single vulnerability index. Standardization makes it possible to develop a composite index based on combining the



values of different variables into one summary value (i.e., the index value). Researchers adopt one of three methods for standardizing the value of the different variables: the conventional z score (also referred to as linear rescaling) (Wu et al. 2002; Chakraborty et al. 2005, 2012), the min-max rescaling method or maximum value transformation (ratio of value) (Cutter et al., 2000, Wu et al., 2002, and Chakraborty et al., 2005). In a case study analysis comparing the extent to which several distinct SoVI produced similar or dissimilar results in assessing the vulnerability of counties along the Atlantic and Gulf coasts, Yoon (2012) finds that the overall social vulnerability scores using three different standardization methods correlated with each other to a very high degree. Thus, Yoon concluded that there is no significant difference among standardization methods and that using the same SoVI variables with different standardization methods does not create a difference in the overall SoVI score (2012: 834). Consequently, this research adopts the maximum value rescaling method because it is easy to implement and understand. The community with the highest vulnerability for a variable will attain a value of 1, and all other communities are less than 1.

The maximum value rescaling method to rescale each measured value for a variable according to the following formula:

$$R_i = \frac{X_i}{X_{max}}$$

Where  $i$  represents a community,  $R$  is the standardized value, and  $X$  is the raw value for that community, and  $X_{max}$  is the maximum value across all communities for that variable.

The range of standardized values of variable  $X$  will be between 0 and 1. The community with the maximum value will be divided by itself and, therefore, equal to 1. Eight socio-

demographic characteristics were selected from the original set of 29 variables for assessment to generate the SoVI (see table 5). They include the length of residence (the number of years that respondents have lived in the same hazardous locations), occupation, education, number of flooding events experienced, number in family, early warning, and self- help. Not all the variables were included for assessment or standardization because considerable overlap exists between them. Many of the variables typically correlate highly and measure mostly the same themes. For example, the variable 'occupation' is in the same category as 'household income' and 'per capita income.' Occupation is often a good indicator of a person's income or per capita income. While they are different, and their difference may be significant in other studies, in this research, measuring the 'occupation' variable provides enough representation of the 'household income' or 'per capita income' variables. The selected variables represent the core characteristics of both individual and collective social vulnerability to the risks of flooding in the research communities.

***Table 7 Definition of variables***

No	Variable	Definition of variables
1	Occupation	%respondents who are farmers and fishermen
2	Years of Residence	% of people who have lived in the same location for less than 20 years
3	Education	% of people without education
4	Number of floods	%people with flood experience
5	Family Size	%families with five or more people
6	Early Warning	% who did not receive early warning
7	Self-help	% of people who resort to self-help
8	Residing in a hazardous location	%people residing in a hazardous location

Measuring the variables in each community involves counting the number of respondents in that community who gave an answer and converting it to a percentage. Table 8 shows the measured values for each variable in each community.

*Table 8 Measured variables with scores converted into percentages for the research*

Locations		Occupation Type	Years of residence	Incidents of floods	Education	Number in Family	Early Warning	self-help	Proximity to hazard
Makurdi LGA	Wadata/Rice Mill	42.9	29	26	17	29	91	3	100
	Wurukun (Angwan Jukun)	75.0	50	25	15	23	88	0	100
	Gyado Villa	75.0	35	15	10	25	100	0	100
Katsina-Ala	Hausa Quarters	71.4	57	34	43	34	100	00	100
Agatu LGA	Ocholonya	100.0	100	100	67	25	100	100	100

The values were then standardized using the max value rescaling transformation method. Table 8 shows the scaled or standardized values used to calculate the overall vulnerability score. Determining the vulnerability score for each community is achieved by calculating the average of the standardized values for that community. It is acceptable to use a weighted average when weights reflect the importance of the variables to the overall vulnerability. One difficulty in implementing this method arises from determining the weights, which often requires subjective assessments of relative importance. Here, the variables were equally weighted; they were all equally relevant for determining vulnerability. All the issues affecting vulnerability are equally essential and received equal attention.

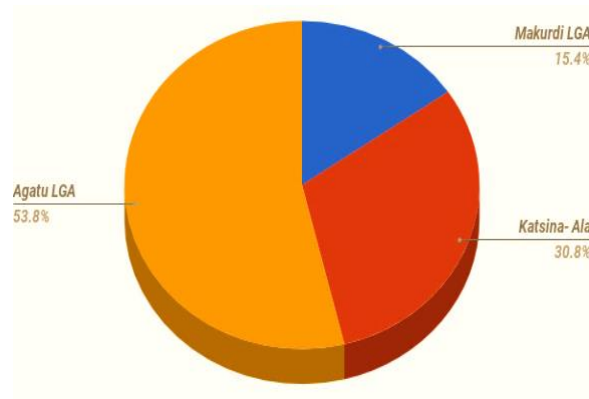
*Table 9 The average of all standardized values*

Locations		Occupation	Length of residence	Experience of previous incidents of flood	Education	No. In family	early Warning		Vulnerability Index
Makurdi LGA	Wadata/Rice Mill	0.43	0.29	0.26	0.26	83	0.91	.43	0.49
	Wurukun (Angwan Jukun)	0.75	0.50	0.25	0.23	.66	0.88	.40	0.52
	Gyado Villa	0.75	0.35	0.15	0.15	.73	1.00	.60	0.53
Katsina-Ala LGA	Hausa Quarters	0.71	0.57	0.63	0.64	.00	1.00	.00	0.79
Agatu LGA	Ocholonya	1.00	1.00	1.00	1.00	.73	1.00	.00	0.96

These aggregated SoVI scores are used to examine their relationships with the flooding.

### **Determining social vulnerability**

*Figure 9 Pie chart showing overall levels of social vulnerability in the research locations*

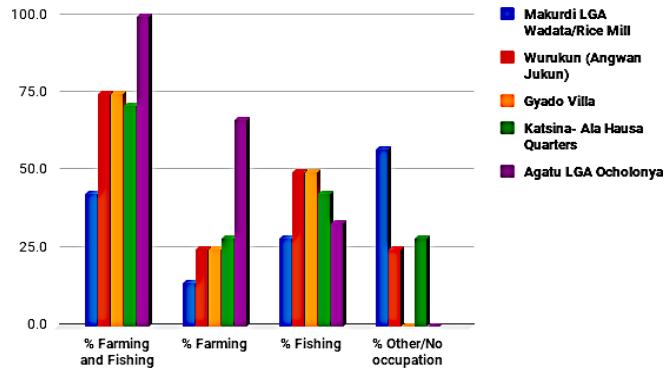


Overall results from data, as shown in the SoVI, affirm the assumption of the study that social vulnerability is a critical factor in the 2012 flooding. In table 8, the SoVI produced from eight standardized variables demonstrates a strong relationship between social vulnerability and flooding. The most vulnerable village was the Ocholonya community, followed by Hausa Quarters in Katsina-Ala LGA with the three locations in Makurdi, the Benue State Capital being the least vulnerable.

Typically, rural communities in Nigeria are remote and less developed; hence they are more likely to be negatively impacted by natural hazards. Ocholonya was the most rural and remote, which immediately explains why it is the most vulnerable. 'Remoteness' was defined as a function of Institutional Neglect in Chapter Three and will be used for broader analysis in Chapter Eight. Wadata/Rice Mill, Wurukun, and Gyado Villa are comparatively the least vulnerable because they are all within Makurdi. Makurdi is the semi sub-urban state capital. Compared to Ocholonya and Hausa-Quarter in Katina-Ala, Makurdi offers a range of livelihood options, such as paying formalized non-agricultural jobs. It has a higher density of social structures such as houses, commercial buildings, administrative centers, infrastructure (roads and telecommunication networks) through which humanitarian aid can be brought in, thus increasing the residents' chances of receiving aid and early warning information during and after emergencies. However, the study's locations within Makurdi remain characteristically rural, and people's individual experiences, such as employment opportunities and access to other resources that enhance personal development, are not much different from those of the people in Ocholonya or Katsina-Ala. The preceding sections present a detailed analysis of the SoVI, which was produced based on the data from fieldwork, to demonstrate how social vulnerability is manifested within the communities empirically.

## Occupation type

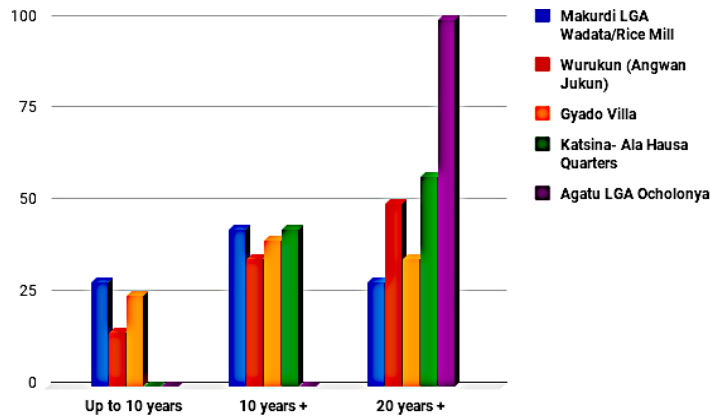
Figure 10 Graph showing occupation type



All the communities under study lived close to the Benue River, and fishing and farming are the principal means of livelihood. In Ocholonya, 100% of the respondents were either engaged in both self-employed farming and fishing, but 75% of them were not employed. In Hausa Quarters, Katsina-Ala, 71% of participants are engaged in fishing or farming and, 42% of them had no employment. 75% of respondents in Gyado Villa and Wurukum were engaged in farming or fishing or both, 51% of participants in Gyado Villa and 91% in Wurukum were unemployed. Cutter, Boruff & Shirley (2003:248) note that self-employed fishers suffer when their means of production is lost and may not have the required capital to resume work. In Ocholonya, the participants showed broken fishing equipment still in the process of being rebuilt.

## Length of residence

Figure 11 Graph showing length or residence Graph showing the length of residence



Results show that 100% of the Ocholonya community has lived in the community for more than 20 years. In Hausa Quarters, 57% of the respondents had lived in the location for 20 years. Wurukum had 50%, Wadata/Rice Mill 29%, and Gyado Villa 35%, respectively. The length of time that people continue to reside in hazardous locations is a marker of social vulnerability. Most prominently, it shows that the victims are unable to relocate to safer grounds, often due to a lack of access to resources. A follow-up question on why respondents have resided in these hazardous locations for extended periods asks why they have not moved away. A reoccurring response was, "I cannot afford to relocate," "I have no place to go." 100% of the respondents in Wadata/Rice Mill stated that they have not moved for economic reasons. 75% of respondents in Wurukum stated that stayed for economic reasons while the other 25% said it was for family roots. In Ocholonya, 83% said they remained because of family roots, and 17% remained for economic reasons. In Gyado Villa, 100% of participants stayed for economic reasons, and finally, in Hausa-Quarters, 71% of respondents stayed for financial reasons. The economic or financial reason here essentially means a lack of access to resources.

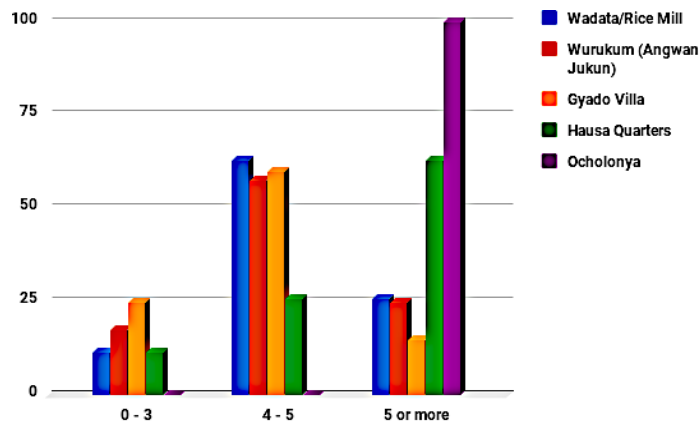
Ocholonya and Angwan Jukun in Wurukum, Makurdi, which are both local indigenous communities, have existed before the emergence of Nigeria. This status explains why a

significant number of respondents in Ocholonya indicated that they stay because of family roots. However, only 25% of respondents in Wurukum, Makurdi, remain for reasons of family roots. As stated previously, the state capital, Makurdi, experiences migration from other parts of the state. Those newly integrated into the community, however, do not feel the same responsibility towards the land.

Indigenous groups expressed a strong affinity to the land and are less willing to relocate despite the tremendous threat of flooding. While affinity to land was a strong motivation why respondents ignore the risks of flooding and while it also explains in some way, why victims have lived in these hazardous locations for so long, a significant portion of them still maintain that they would accept resettlement by government, if given the option. The more diverse population who do not lay claim to ancestral legacy expressed willingness, in some cases eagerness, to relocate if they had the resources.

### Experience of previous flood events

*Figure 12 Graph showing number of floods experienced*



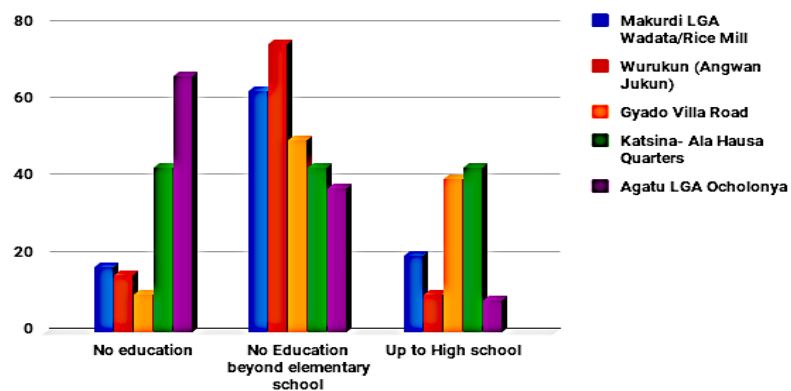
The survey instrument included a question on the number of flood events respondents had experienced at different points in their life course. A history of having experienced several incidents of flooding was common among the study participants. According to Bigombe & Khadiagala (1990:39), people who reside in flood plains or hazardous spaces are usually low-



income earners whose socioeconomic lives revolve around land and water because they are predominantly farmers and fishermen. About 50% of the total respondents have experienced five or more incidents of flooding. As seen in response to the question of "years of residence," over 50% of the total respondents expressed willingness to relocate if they had the means. People with limited economic capacity, who lack access to resources and have also experienced significant stress, trauma or loss from previous disasters are often unable to cope and recover enough before a new disaster hits to disrupt their lives even more. Such people become more economically and socially insecure as a result of multiple efforts at rebuilding, as each effort puts additional layers of constraints on them. For poor people like the ones in this research, it has become a vicious cycle they are unlikely to overcome on their own.

## Education

*Figure 13 Graph showing the level of education.*



Lack of education, or low-level educational achievement, is both a contributor to vulnerability and a marker of vulnerability. Education is a measure of human capital. Human capital is an asset, and low educational attainment prevents poor people from becoming part of the high-productivity growth process (HDRO, 2016:12). While education is not immediately linked to vulnerability, according to Cutter, Boruff & Shirley (2003:248), education correlates with socioeconomic status. This correlation means that those with basic or higher educational

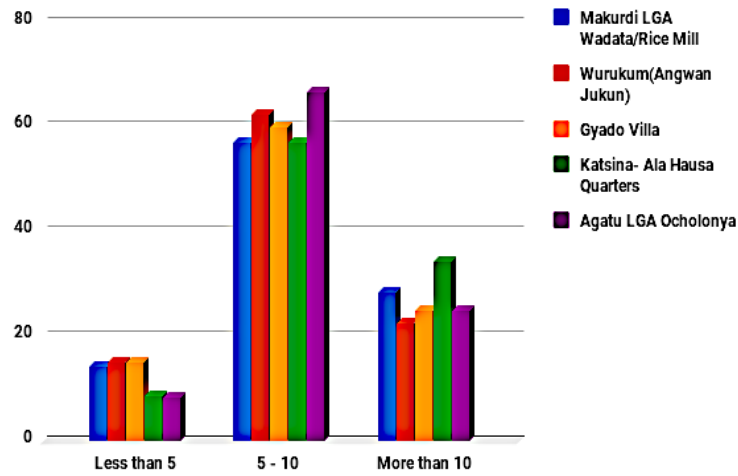
attainment have greater lifetime earning opportunities. At the same time, those with no education or lower education are constrained by several factors, including the essential ability to understand warning information and access recovery information. Hong & Pandey (2007) examined the interaction effects of three dimensions of human capital (education, training, and health) and found that postsecondary education is a particularly important factor associated with reducing poverty and improving socioeconomic status.

Results show that communities with a less educated population rank higher on the vulnerability index and are more vulnerable. For example, Ocholonya has a score of 1 on the SoVI, with 67% of the respondents having less than high school education. The only school in the location was impacted by the flooding and was in the process of being rebuilt when it was again destroyed during a communal conflict. Thus, at the time of the fieldwork, the location had no school. The focus group took the research team around the village, showing us their destroyed school and the community's new initiative to erect a three-room classroom. I asked if there was any form of assistance from the government, they again confirmed what they stated in the questionnaires, that after a major flooding event, some government officials would show up to conduct an assessment of the damages but never returned with any feedback support.

The three locations of Wadata, Wurukum and Gyado Villa in Makurdi, the semi sub-urban town in the state capital, however, had a higher percentage of an educated population and registered a score of 0 each, with 10% in Gyado Villa, 15% in Wurukum and 17% in Wadata. Education is vital and has substantial spillover benefits to personal empowerment, income, and social cohesion. The lack of access to an adequate education is a function of Institutional Neglect and addressed in more detail in Chapter 6.

## Number in Family

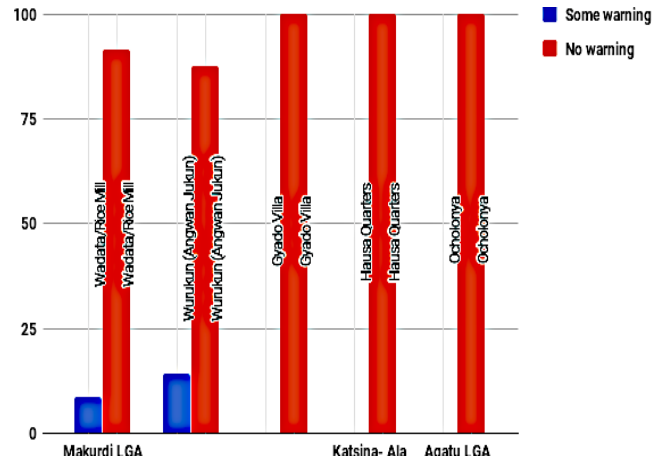
Figure 14 Graph showing the family size



In several vulnerability studies, large family size and vulnerability correlate (Cutter, Boruff & Shirley, 2003). Data in this research shows that more than 70% of all respondents have more than five people in their households. For example, Hausa Quarters have a SoVI score of 1. The average number of people in the participants' household was 8; only 3% had less than five people in the household, 20% have between 5 to 10, and 12% have more than ten people in the household. Ocholonya has the next highest number in the family. Only 5% of respondents had less than five people in the household. 40% of participants have between 5 to 10 people in the household, while 15% have more than ten people in the household. Ocholonya has a SoVI score of 0. While large family size is associated with social vulnerability in most vulnerability studies, this research discovered other ways that large family sizes are beneficial in some circumstances during a disaster. In this respect, the findings of this research depart from that of other studies. Many communities, such as the Ocholonya and Hausa Quarters locations, view larger families as a safety net- the more hands there are to work, the higher the chances of increased farm output.

## Dissemination of early warning

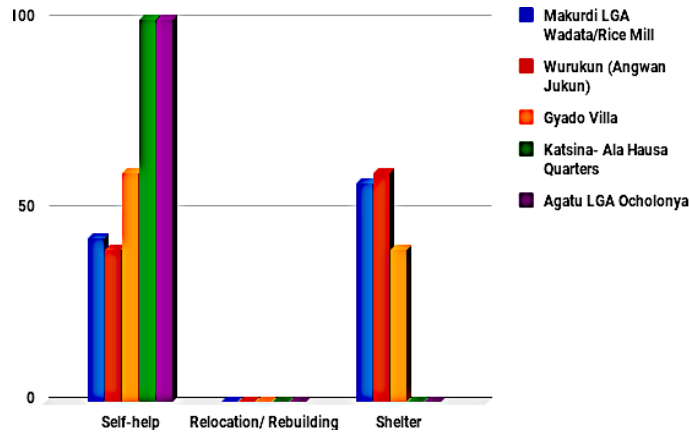
Figure 15 Graph showing dissemination of early warning



As data from this study reveals, too often, those at risk do not receive adequate early warning messages and are not always well prepared or equipped to respond to unfolding hazard events (EWC II, 2004: 6). 98% of the participants in the study said they did not receive early warnings. As shown in figure 17, only respondents in Makurdi LGA received early warnings. Makurdi LGA received early warnings because, as noted earlier, Makurdi doubles both as the local government headquarters and state headquarters and therefore has more resources. Ocholonya and Hausa-Quarters are the most distant from the seat of government, and respondents in these locations received no early warning. In Chapter 3, 'remoteness' was developed as a factor of Institutional Neglect and will be used in subsequent chapters in the analysis of the dissemination of early warning in the flooding disaster.

## Self-help

Figure 16 Graph showing the use of self-help



The "self-help" variable aims to measure access to overall institutional assistance received by the respondents during the flooding event. It shows that most of the participants resorted to "self-help" in the absence of government assistance. More than 80% of participants had no assistance and had to figure out ways to deal with the disaster. Blaikie et al. (2004: 97) refer to this as "individually generated safety." "Self-help" refers to a situation where victims of flooding devise their means of response because assistance from government and other institutions is inadequate or unavailable. In a civil society, a critical sovereign responsibility is the protection of citizens from harm. In a study of residents' coping measures in flood-prone areas in Makurdi, Benue State, Tyonum, and Shabu (2013:125), all the coping strategies were self-initiated. For those who received help, it was only in the form of shelters that were bare floors of schools and only in Makurdi.

## **Section 2**

### **Assessing physical vulnerability**

Physical vulnerability in the strict sense relies on natural science for its assessment. The concept of physical vulnerability emphasizes the probability of exposure to risks associated with natural hazards (Adger et al., 2004; Cutter et al., 2003; Cutter, 1996). In this research, it has a much broader utility. Physical vulnerability is a function of all the aspects of the physical properties of the research locations, which contribute to vulnerability. The physical properties of the research areas are of two types. First, there are the naturally occurring geophysical and biophysical features of Benue State, including the natural climatic conditions such as torrential rainfall. The second aspect of the physical environment includes human-made factors such as the modifications of the physical environment. Modifications of the environment include improper building and infrastructure design, location, and construction. Inadequate drainage, poor solid waste management, and destructive and unsustainable land-use practices such as overgrazing, deforestation, and cultivation of marginal lands, are ways humans modify the physical environment.

Human-made factors also encompass the lack of intervention to manage the changing environment, such as the absence of physical infrastructure. For example, the absence of drainage systems increases exposure to the threats of flood hazards. Failures of efforts towards minimizing flood damage by either corrective or preventive measures have, over the years, exacerbated flood sin Nigeria (Emodi, 2012).

This section consists of three parts. Part 1 presents the physical geography of Benue State, including its climate and a brief description of crucial physical characteristics, including the

Benue River system. Part 2 presents the naturally occurring physical features of the study locations, and part 3, the human activities (human-made hazards), which contribute to the physical vulnerability of the locations of the research. Poor infrastructure, inadequate drainage systems, lack of drainage systems, poor sanitary habits, and indiscriminate waste dumping, which clog natural water channels and drainage systems, all contribute to (human-made) flood hazard in the research areas and are widespread throughout all parts of Nigeria. Finally, an adaptation of the Hazards-of-Place model of vulnerability by Cutter (1996) is presented at the end of the chapter to pull the analysis together and demonstrate how the physical and social aspects together produce disasters.

## **Physical geography of Benue River**

### **Benue State: Physical Geography and Climate**

Benue State in Nigeria lies within the lower river Benue trough in the middle belt region of Nigeria with geographic coordinates of longitude  $7^{\circ} 47'$  and  $10^{\circ} 0'$  East and Latitude  $6^{\circ} 25'$  and  $8^{\circ} 8'$  North. Benue State has boundaries with five other states. To the north, Nasarawa State; to the south, Cross-River State; to the south-west, Enugu State; to the east, Taraba State; and Kogi State to the west. More significantly, the State also shares a common boundary with the Republic of Cameroon on the south-east. Benue State occupies a landmass of 34,059 square kilometers. Generally, Benue State is low lying (averaging 100m-250m) and gently undulating with occasional inselbergs, knolls, and laterite. At the boundary area with Cameroon, Kwande, and Oju Local Government Areas, one encounters hilly terrain with significant local relief, characterized by steep slopes, deeply incised valleys, and generally rugged relief. Elsewhere, gradients average less than  $4^{\circ}$ . Much of Benue State is within the Benue Valley/trough. The Benue and Niger Valleys, also called the Niger/Benue trough, were transgressed by the waters of

the Atlantic Ocean during the Tertiary and possibly the Interglacial periods of the Quaternary glaciation. As a result, marine sediments form the dominant surface geology of much of Benue State. The research areas are low-lying, poorly drained, and susceptible to floods during the rainy season. Three communities in Makurdi- Wadata, Wurukum, and Gyado-villa are situated on the flood plains and astride the riparian wetlands that drain Makurdi town. Hausa Quarters in Katina-Ala and Ocholonya are also on the floodplains of the Benue River.

### **Brief on the River Benue - Relief and drainage**

Benue River Basin spans an area of about 181,000 ha, making it a valuable economic resource. The Katsina-Ala River is the largest tributary of the Benue River. While all the other locations were directly impacted by flooding from the Benue River, during the 2012 flooding, the flood in Hausa Quarters, Katsina-Ala, was from River Katsina-Ala. Smaller rivers in Benue State include Mkomon, Amile, Duru, Loko Konshisha, Kpa, Okpokwu, Mu, Be, Aya, Apa Ogede, and Ombi. Extensive swamps and ponds used in the dry season for irrigated farming characterize the flood plains. Many of the streams in Benue State are seasonal, although the State has high drainage density. Benue State, therefore, experiences acute water shortages in many of the Local Government Areas during the dry season.



*Table 10 Attributes of the Benue River*

Geographical attributes	Data
Source Total length Catchment area Water area Major tributaries  Volume of Discharge at Mouth	Adamawa mountains, northern Cameroon 1,440 km 64,000 km <sup>2</sup> Bankfull (In Nigeria): 1,290 km <sup>2</sup> ; flooded: 3,100 km <sup>2</sup> (Floodplain: 1 810 km <sup>2</sup> ) Mayo-Kebbi (Cameroon), Faro, Gongola, and Katsina Ala Nigeria) 1 920 m <sup>3</sup> /s (mean max.) 32 m <sup>3</sup> /s (mean min.)

Source: Food and Agriculture Organization (FAO, 1990)

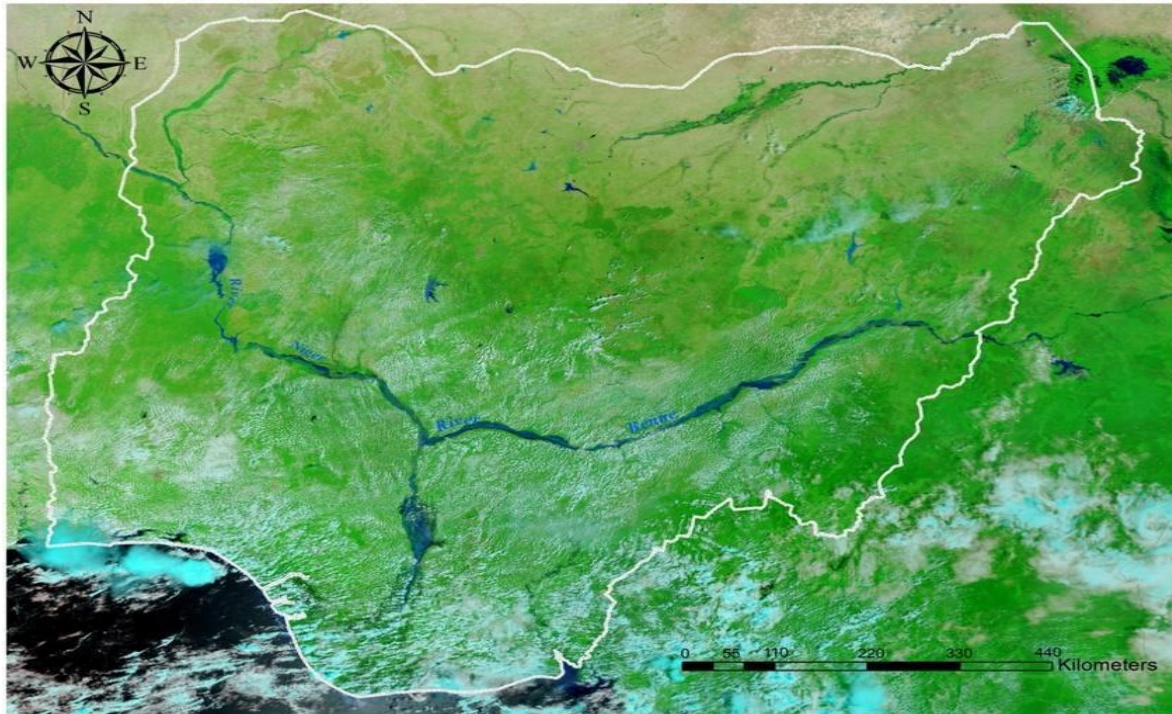
## **Naturally occurring physical features of Benue State**

### **Coastal floodplains as a physical hazard**

The floodplains create exposure to the threats of flooding. The coastal zone or flood plains are generally the edge or margin of land next to the sea or ocean. The coastal flood plains are a diverse region with unique physical features and characteristics that include such areas as the Lake Chad Basin, the shorelines of Rivers Niger and Benue (including their tributaries such as River Katsina-Ala), and the ocean shoreline of the southern part of the country. The most significant water bodies in Nigeria with vast coastal zones and flood plains are the rivers Niger and Benue. The coastal floodplains often are used for agricultural purposes because of the proximity to the River Benue, which enhances the fertility of the land. The Nigerian coastal zone stretches for thousands of miles along a thin strip of the country. At least 60% of the country's population resides within 30 km of the coastal zone region (Sokari-George, E., 1989:286), while

an estimated 16 million people or 28% of Nigeria's population live in the coastal zones. Flood plains are naturally hazardous in themselves and are the primary area of physical vulnerability because of the presence of a river or sea. Most of the significant floods which occur in Benue State annually occur within the flood plains of the Benue River and its tributaries.

*Figure 17 MODIS image of the 2012 flooding on the Benue and Niger rivers*



The Benue and Niger Rivers. The graphic shows the Benue River rising in the east from Cameroon and converging with the Niger river in southern Nigeria, from there the Niger flows into the Gulf of Guinea in the Atlantic Ocean, through the Oil Rivers. The color of the water ranges from electric blue to navy. Source: (NASA, 2014),<sup>24</sup>

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<sup>24</sup> <https://earthobservatory.nasa.gov/images/79404/flooding-in-nigeria>

Figure 18 GIS map of the fieldwork sites in Makurdi LGA

### Makurdi Sites

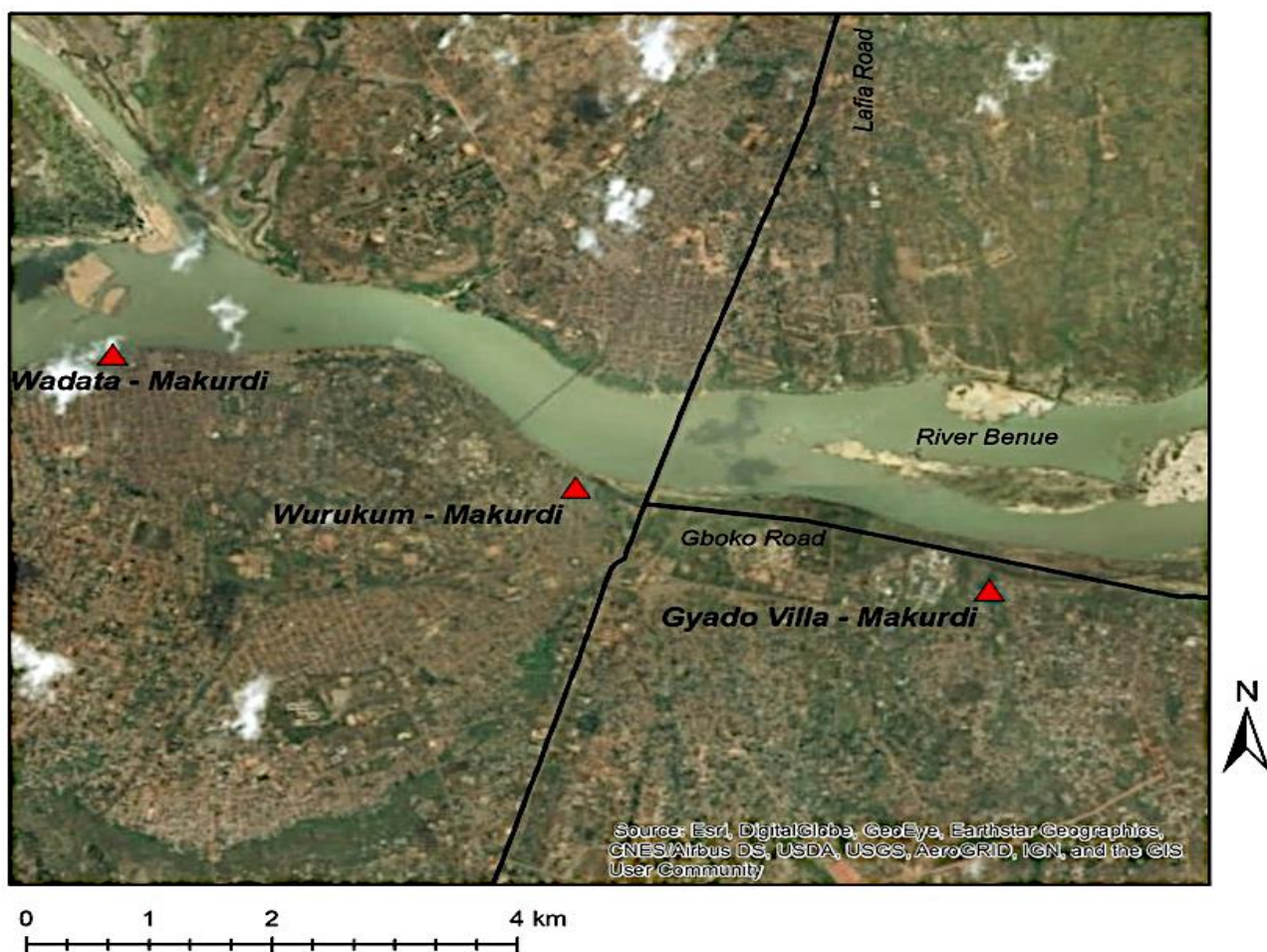


Figure 19 GIS map of Hausa Quarters (Katsina-Ala) fieldwork site<sup>25</sup>

## Katsina-Ala



<sup>25</sup>Figure 21 GIS image shows the location of Hausa Quarters on the flood plains of River Katsina-Ala, a tributary of the Benue River. While all the other locations were impacted directly by flooding from the Benue River, the flooding in Hausa Quarters, Katsina-Ala, was from River Katsina-Ala. River Katsina-Ala is a significant tributary of the Benue River in Nigeria, and therefore, any major flooding on the Benue River automatically induces flooding on the River Katsina-Ala.

Figure 20 GIS map of Ocholonya fieldwork site on the Benue floodplains<sup>26</sup>

### Ocholonya Study Site



### Torrential rainfall as a physical hazard

<sup>26</sup>Figure 22 shows the location of Ocholonya on the flood plains of the Benue River. Ocholonya is a remote community registered as a voting block under Okokolo in Agatu LGAS, in the (EC Nigeria) Directory of Polling Units. The resident population consists of mainly farmers and fishers. As seen from the map, there exists no built barrier between the river and peoples' homes.

The most common form of severe flooding in Nigeria is induced by excessive downpours, which cause water in the stream or river to flow beyond its boundary to nearby settlements. Heavy rainfall can also cause flooding to occur on the shorelines of large inland lakes. Torrential rainfall as a biophysical hazard contributed to the threat of flooding and identified in the official government account as the cause of the 2012 flood disaster.

Based on Köppen's climate classification, Benue State lies within the AW<sup>27</sup> climate and experiences two distinct seasons, the wet (rainy) season<sup>28</sup> and the dry season.<sup>29</sup> The dry season starts in November and ends in March, with temperatures fluctuating between 21 – 37 degrees Celsius. The rainy season generally begins in April and ends in October, with annual rainfall in the range of 1,332 mm (Makurdi), 1,547 mm (Katsina-Ala), and 1,496 mm (Ocholonya). The mean annual precipitation for the State is about 1,370 mm and has a bimodal pattern. Figure 23 shows annual rainfall totals and the total number of rainy days in Makurdi (1973 - 2013). It shows that the lowest discharge rate in the River Benue was recorded in 1983, while the highest discharge rate occurred in 2012 during the flooding. Figure 21 shows the annual rainfall totals and the total number of rainy days in Makurdi (1973 - 2013).

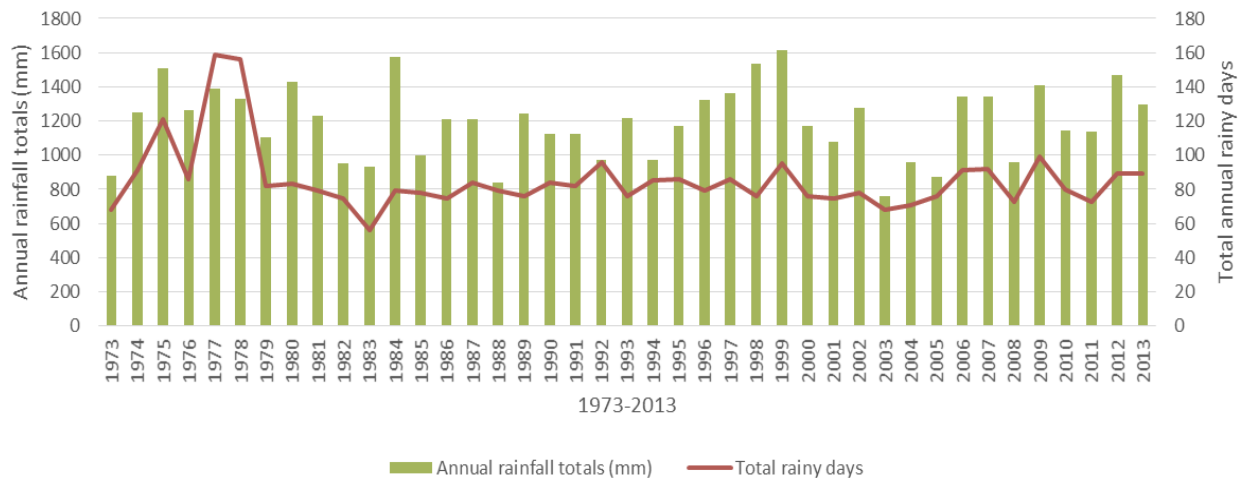
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<sup>27</sup> AW climates' have a pronounced dry season, with the driest months, that have a precipitation of less than 60 mm, and less than 1/25 of the total annual precipitation.

<sup>28</sup> Under the Köppen climate classification, for tropical climates, a wet season month is defined as a month, where the average precipitation is 60 millimeters (2.4 in) or more.

<sup>29</sup> Under the Köppen climate classification, for tropical climates, a dry season month is defined as a month when average precipitation is below 60 millimeters (2.4 in).

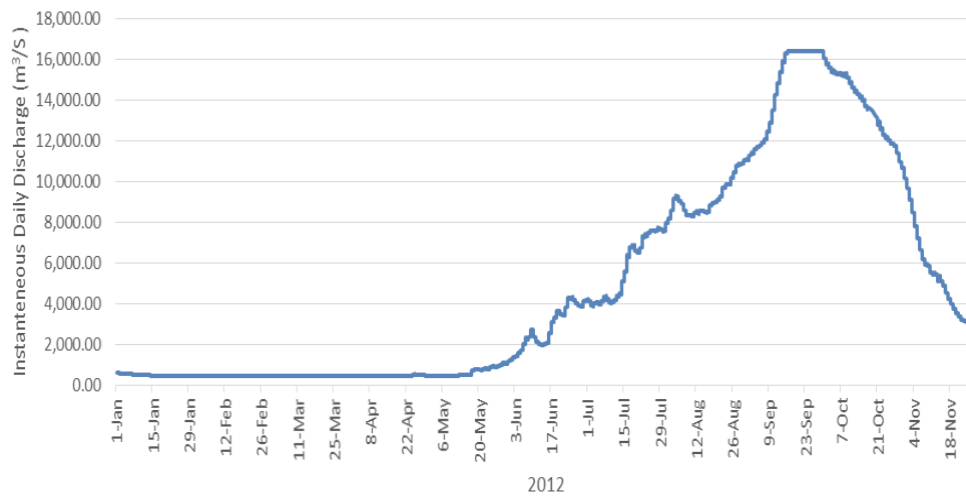
**Figure 21 Makurdi- annual rainfall totals and the total number of rainy days (1973 - 2013)**



Source: Abah and Petja, 2017

Figure 22 is a graph of the instantaneous daily discharge of the River Benue for the year 2012. The average discharge at Makurdi hydrological station was 3,468.24 m<sup>3</sup>/s. On September 19th, 29th, and 30th in 2012 (the period of the flooding), it had a recorded peak flow discharge of 16,400 m<sup>3</sup>/s. The high inflow in July, August, and September 2012 led to River Benue overflowing its banks and submerging land areas and settlements in the Upper and Lower Benue Basins. Also, there was a high discharge into River Benue from Lagdo Reservoir in Cameroon in July and subsequent months. Thus, high flow in River Benue was due to both inflows from the Lagdo dam in Cameroun and inflows from the Upper and Lower Benue Basins (Abah & Petja, 2017: 549 - 550).

*Figure 22 Daily streamflow hydrograph of River Benue in Makurdi, 2012*



Source: Abah and Petja, 2015

## **Human-made contributors to physical vulnerability**

### **Modification of the natural environment as physical vulnerability**

The vulnerabilities created by natural hazards are worsened by adverse human modification of the environment in the form of the building of houses on flood plains, inadequate drainage of stormwater, lack of maintenance of existing drainage systems, increased runoff because of uncontrolled expansions of impermeable surfaces, urbanization, agricultural activities, deforestation and weak institutional capacity (Adelekan, 2010; Egbenta, 2004). Modification to the natural environment refers to intervention within the natural physical landscape through human action/inaction, which contributes to physical vulnerability. A lack of regard for development control was apparent in all the research locations. In most cases, there is no planning of the physical environment or conformance to the natural physiographic characteristics of the landscape. Where planning exists, enforcement is weak. Infrastructure such as sidewalks, pedestrian walkways, and drainages are absent.



Ojanuga and Ekwoanya (1996:417) trace the lack of regard for development control, which was more apparent in Makurdi because of its status as an emerging urban center, to the aggressive development that began in Nigeria after independence. According to Ojanuga and Ewoanya (1996), immediately following the Nigerian independence in the mid-1960s, aggressive rural development programs, coupled with state creation, resulted in the transformation of many small communities into rapidly growing urban centers. Makurdi was one of the newly created city centers and became the Benue state capital in 1976. The three locations of this research in Makurdi were among those that experienced such transformation. The transformation saw good agricultural land turned into land for urban-like dwellings and other non-agricultural uses.

Similarly, Mngutyo and Ogwuche (2013:2) note the dense and haphazard development of the flood plains in Makurdi is due to the high demand for land for development. In Ocholonya, it is the lack of any physical infrastructure to minimize the risks of proximity to the river, which contributes most to physical vulnerability. In Makurdi, the hydrologic and topographic characteristics of the areas are severely modified, creating runoffs along the roads, gutters, and even in people's homes. Figure 25 shows the foundations of new homes turned into a garbage dumping ground, thus creating runoffs.

*Figure 23 Waste dumping on the street causing flooding (Wurukum, Makurdi)*



Source: Fieldwork 2017

### **Proximity to the source of hazards as physical vulnerability**

Proximity to the source of hazard refers to the decisions that make people reside close to the object of risk, in this case, the Benue River. Familiar and striking is the research communities' proximity to the Benue River. All the study areas are on the floodplains of the Benue River. The coastal flood plains are associated both with physical and social vulnerability. The human conditions which make people live in these hazard areas are associated with social vulnerability. For example, one of the social vulnerability variables in the study is "length of residence." As noted in section 1 (and as will be discussed in subsequent chapters as well), the people's inability to relocate in the face of threats of flooding is related to access to resources (note again, that lack of access to resources is not the same as lack of resources). The people who live in these conditions are socially, economically, and politically marginalized, hence not empowered to make decisions that keep their families safe from areas exposed to the risks of flooding. A

significant number of residents in Ocholonya and Angwan Jukun stated that they continued to reside in the locations because of their ancestry. The chief of the community noted that they are more than just inhabitants of the land but are, in fact, guardians of it. "We have ancestral, cultural, and moral obligations all at the same time, to keep the legacies of our ancestors and guard the land for future generations," he told me. In this situation, it is difficult just to pick up and leave. Figures 24 shows how close to the river the people live.

*Figure 24 Hausa-Quarters, Katsina-Ala- proximity to the river*



Source: Fieldwork, 2017

Overall, people live in very close proximity to the river. They walk from their homes into the river. There are no barriers between the home and the river. When asked how they coped with the constant threat of the river overflowing, one of the participants in Hausa-Quarter stated that it was not always that way. According to him, of the thirty-eight years of his living in the location, he had only four years of experience flooding. He lived right at the edge of the river and

explained that the river was not always this close but that as flooding became prevalent, it started a process of erosion that progressively worsened and has seen the river inching closer and closer to their homes. He stated that the spot where we stood to conduct the interview was the foundation of a home that was washed away by flooding. "The land was so big, but it is the river that has [eaten] it all up," he told me. He stated that more than 300 yards into the river from where we stood used to be all farmland.

### **Absence of drainage systems as a contributor to physical vulnerability**

In a study of the role of drainage systems in Calabar, Effiong, Atu, Njar, and Amuyou (2009) found that, in addition to poor drainage connectivity and the use of sub-standard materials for construction, the disposal of solid waste into gutters had the most impact in creating physical vulnerability to the threat of flooding. Similarly, in a study of flooding in Victoria Island and Ikoyi in Lagos State, Nigeria, Aba & Petja (2017) argue that although floods in these locations result from heavy rains, they point out that the failure of drainage channels to empty into the Lagos lagoon was a significant contributor to the flooding. There is an enduring problem of inadequate drainage systems or even a complete absence of drainage systems from the rural to the urban areas in Nigeria.

In Wadata, Makurdi, one respondent who identified as a retiree from the Ministry of Environment, stated that waste dumping was one of the most severe problems that create exposure to the threats of flooding. According to him, the government's neglect in enforcing existing codes prohibiting illegal solid waste dumping has encouraged indiscriminate and reckless disposal of waste, posing significant threats to both the environment and human health. According to him, during the rainy season and especially when it rains at night, some residents will release solid waste into the environment to avoid having environmental officials come to

take care of it at a cost. He added that when the offenders are apprehended, they would pay a bribe and would face no consequences.

Figure 25 shows what is supposed to be drainage. Residents stated that it was an effort to divert flood water from a World Bank drainage project abandoned over ten years earlier and remained a constant contributor to the area's flooding hazard. Figure 30 shows the extent of the damage occurring from the abandoned project. Residents also stated that they had written several petitions to the government but never received any resolution to the problem.

*Figure 25 Residential area in Wurukum without drainage*



Source: Fieldwork, 2017

### **The hazard-of-place model of vulnerability**

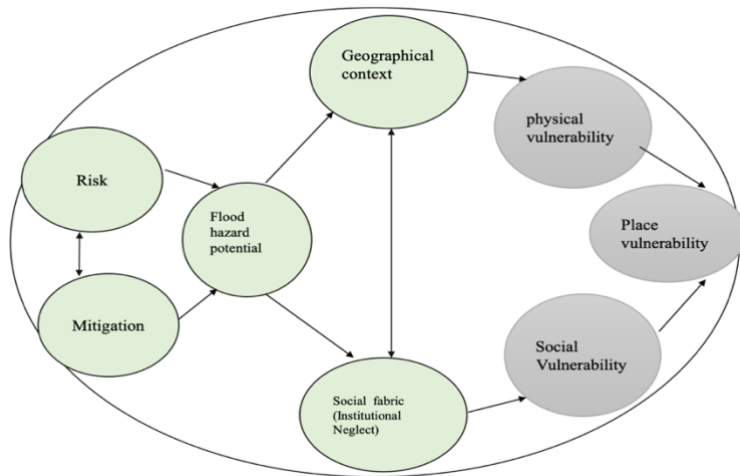
The Hazards-of-Place model by Cutter (1996) is used here to demonstrate how the interactions of physical and social vulnerabilities produce disasters. The Hazards-of-Place model was designed by Cutter (1996) to combine both the traditional view of the disaster, which focused almost exclusively on the physical attributes of the event (biophysical risk), with the

more modern idea of social vulnerability, which, as noted earlier on, critics have argued focused exclusively on the economic aspects of disasters (von Vacano and Zaumseil, 2014:11).

The Hazards-of-Place model as used here integrates the two aspects of vulnerability (physical and social) tying them both to place. It shows how the physical properties of the research locations interact with the social fabric to produce the place's vulnerability. Figure 26 is a modified hazards-of-place model of the 2012 flooding disaster adapted from Cutter (1996). Place vulnerability can change over time based on alterations in risk, mitigation, and the variable contexts within which hazards occur.

### The 2012 flooding Hazards-of-Place model of vulnerability<sup>30</sup>

Figure 26 The hazard-of-place model of the 2012 flooding



In Chapter 3, Cutter’s Hazard-of-place model was identified as part of the framework that will be used in the analysis. This is to help provide a diagrammatic and a conceptual demonstration of how social and physical vulnerabilities interact to produce disasters. In this

<sup>30</sup>The hazards-of-place model of vulnerability of the 2012 flooding disaster in Benue State, Nigeria, is adapted from Cutter (1996). Risk and mitigation interact to produce the hazard potential, which is filtered through (1) the social fabric, permeated by Institutional Neglect, to create social vulnerability and (2) the geographic context defined by floodplains and riparian wetlands to produce biophysical vulnerability. The interaction between biophysical and social vulnerability creates the place- vulnerability. Note the interactions and feedback loops throughout the model.

model, risk interacts with mitigation to produce the initial flood hazard potential. Risk refers to the probability of a flood occurring and includes aspects such as the potential sources of the flooding, the impact of the flooding itself, and its frequency (yearly, in recent times). Risks can either be reduced through a good mitigation policy or amplified by weak or nonexistent mitigation policies and practices. No mitigation efforts occurred during the flooding event, except for some self-help efforts by victims of the flooding in the research areas. Flooding potential (natural or human-made hazards) interacts with the underlying social fabric of the area represented through the various socio-demographic features influenced by Institutional Neglect.

## **Conclusion**

This chapter analyzed the results of the data from fieldwork presented in Chapter 4. The goal is to determine how the data supports or contradicts the argument that social vulnerability was the source of the 2012 flooding in Benue State, Nigeria. To achieve this objective, the 29 variables which emerged out of the data in Chapter 4 were reassessed and condensed to 26. These 26 variables were again reduced to eight out of which seven, including occupation, length of residence, number of flood incidents experienced, education, family size, early warning, and self-help. The seven variables were then used to develop the SoVI. The merging of variables was necessary to avoid overlap of those variables that were too closely related. 'Proximity to hazard' as a variable was left out because it is already true for all the respondents.

The SoVI was used to measure each community's level of vulnerability. It ranks each community on seven variables. Each community received a separate ranking for each of the seven variables, as well as an overall ranking. Scores from all the locations were positive for social vulnerability, and all the variables scored high on the SoVI. An overall SoVI score of 1 established that social vulnerability was high and played a significant role in the 2012 flood

disaster. These variables now emerge as the factors of social vulnerability that caused the flood disaster. Chapter 6 will explore these factors of social vulnerability, and linking them to existing literature, concepts, and research to determine how they organized the flood disaster, paying attention to the socio-demographic features that emphasize their pervasiveness, if not absolute entrenchment, in the research communities. The analysis will help develop a profile of social vulnerability.

Although much attention has not been given to Institutional Neglect thus far, what remains in the foreground of the analysis is the fact that a pattern of Institutional Neglect was evident throughout the process of gathering data and the analysis of the results in this chapter. Institutional Neglect underscores every variable. As mentioned previously, Institutional Neglect is the consequence of the failure of various bureaucratic institutions to execute programs and policies which help to equitably distribute public goods that, in the context of this research, protect the population from the risks of flooding. It is evident from the analysis that this bureaucratic failure produced the conditions now recognized as the factors of social vulnerability considered in this chapter. If Institutional Neglect is the source from which social vulnerability originates, it follows then that it is the root cause of the flooding. Chapter 7 will present all the factors of Institutional Neglect developed in Chapter 3 to demonstrate a correlation between Institutional Neglect and social vulnerability.

The second section of the chapter presented the physical properties of the research location to show they contribute to physical vulnerability. The general physical properties of the area, include proximity to flood hazards (floodplains) and torrential rainfall, compounded by the overflow and release of water from the Lagdo Dam in Cameroon. All the locations studied were in low-lying areas adjacent to the Benue River. At least 60% of Nigeria's population resides



within 30 km of the coastal, riparian zone region. Riparian zones in Nigeria include areas of the Lake Chad Basin, the shorelines of Rivers Niger and Benue (including their tributaries), and the ocean shoreline of the southern part of the country. Mayomi et al. (2013:37) argue that "the affinity which man tends to have for flood plains and coastal locations" is the primary cause of flood hazard exposure. Although such a claim may have some merit, it fails to consider that not all coastal dwellers live in these areas by choice. Some coastal dwellers, like those in this research continue to occupy these risky zones out of necessity. Most of them are fishermen for whom coastal waters remain a primary and significant source of livelihood. For the rest, the often-treacherous settlements are ancestral homes and places of heritage. An overwhelming majority of research subjects state that they have lived in the locations for generations and have ancestors buried there and could not imagine moving elsewhere.

The overall physical exposure and susceptibility in the different communities were determined using GIS and google maps. Topographical maps and other geographic data were used to assess the physical characteristics of the study area georeferenced during fieldwork.

Analysis of the physical aspects of the flooding helps to broaden the understanding of social vulnerability by showing how social conditions can also influence exposure to physical hazards. For example, an individual may choose to continue to reside in a hazardous location only because of a lack of resources to locate to a safer zone. Furthermore, a consideration of the physical aspects of the flooding also addresses the critique that social vulnerability focuses predominantly on the economic and other social aspects of disasters.

# Chapter 6

## **Flooding in Benue: The organization of social vulnerability**

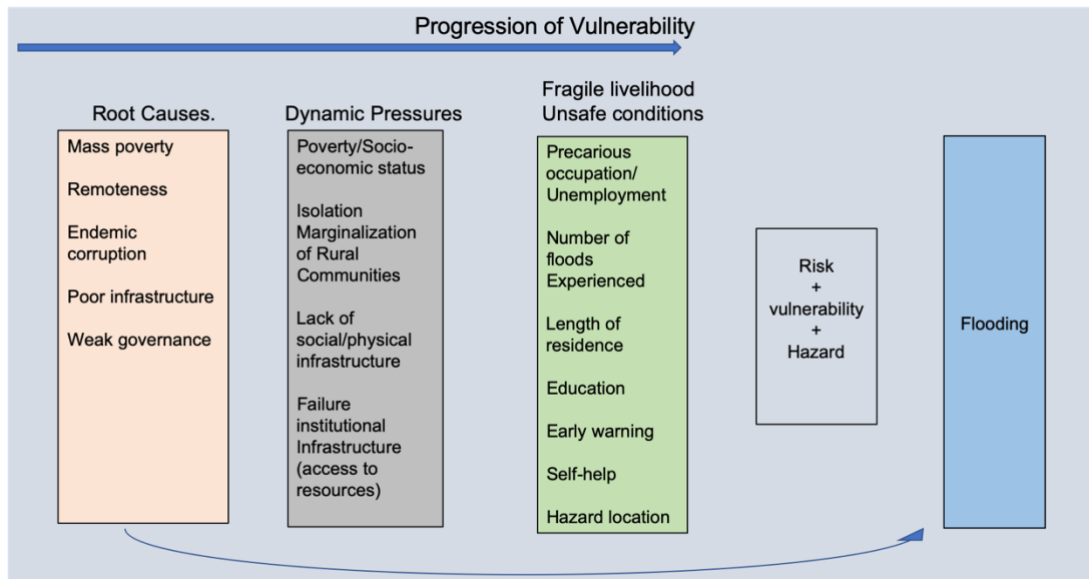
### **Introduction**

The research argument is two-fold. First, it is that the 2012 flooding in Benue State, Nigeria, was the outcome of social vulnerability. The second part of the argument is that social vulnerability to the flooding was influenced by Institutional Neglect. This chapter focuses on the first part of the argument and presents a detailed analysis of how social vulnerability contributed to organizing the flood disaster. Within the context of this research, social vulnerability is the exposure of people or society to the threats of natural hazards that arises from the absence of social and physical infrastructure.

The results and findings in Chapters 4 and 5 established that social vulnerability influenced the necessary conditions for the flood disaster to occur. The indicators of social vulnerability developed from the research findings and data from other studies were used to develop the SoVI in chapter 5. The SoVI, which measures the level of vulnerability, showed a strong association between social vulnerability and the 2012 flooding event. The indicators reflect the socio-demographic features of the research locations and will structure the ensuing analysis. They include poverty/socioeconomic status, lack of infrastructure (social and physical infrastructures), isolation/marginalization of rural communities, social capital (interpersonal/social networks), and human/personal capital (human development index). Significant overlap exists between the indicators, so only poverty/socioeconomic status, isolation/marginalization of rural communities, and lack of infrastructure are addressed.

The chapter begins by introducing the adaptation of the Progression of Vulnerability model of the flooding (from Wisner, Gaillard, and Kelman, 2012:32) as an orientating guide. The Progression of Vulnerability model was introduced in Chapter 3 as an additional analytical resource for the research. The model is necessary to create a linear representation of the organization of vulnerability from one stage to another, beginning with the root cause. The graphic model of the progression of vulnerability in the flooding, Figure 35, provides a visual representation and practical demonstration of the processual nature of social vulnerability. It also establishes a relationship between the root cause (institutional neglect), social pressures (social vulnerability), and physical exposure.

*Figure 27 The Progression of vulnerability model of the 2012 flooding*



This progression of the vulnerability model of the 2012 flooding, Figure 35, is based on the idea that to understand the processes that organize social vulnerability requires us to trace the connections between the impact of a disaster to a series of social factors and processes that precede the flood disaster. The model has three distinct sets of processes or factors that link to the people impacted by the flooding. The model shows how vulnerability progresses, beginning

with the root causes, followed by dynamic pressures that build up from the root causes and unsafe conditions that the dynamic pressures create. The links highlight processes which become further removed from the immediate impact of the flooding. The model also recognizes the geophysical aspect of natural disasters and links one component on the natural side, which is the flooding, to human-induced processes.

In disasters, root causes are often the most distant processes embedded in the social, economic and political scenarios and involve the distribution of power in an area. In disaster or vulnerability research, root causes are the specific processes that create the conditions of vulnerability in which disasters occur. Specifically, this research identifies Institutional Neglect as the root cause of the flooding. It is the first category in the model. Institutional Neglect is engendered by institutional bureaucratic processes that affect the allocation and distribution of resources, including social and physical infrastructure such as roads and transportation networks, schools and education, power supply, sewage, waste disposal systems, hospitals, healthcare community support, and information. Institutional Neglect is addressed in depth in Chapter 7.

The second category on the model is dynamic pressures. Dynamic pressures progress from root causes and are those processes that translate political and socioeconomic actions into local circumstances. Dynamic pressures refer to the idea that broader government policies and actions have a real and immediate impact on the local circumstances. For instance, when there is widespread corruption, those at the local level are denied access to necessary infrastructure. In this research, components of dynamic pressures include poverty/socioeconomic status, isolation/marginalization of rural communities, and lack of social/physical infrastructure and human/personal capital. Dynamic pressures draw on the underlying root causes to create unsafe conditions.

The third category in the model is unsafe conditions. Unsafe conditions are the specific forms in which vulnerability exists in time and space. Some forms of unsafe conditions include those induced by the physical environment, local economy, or social relations. Unsafe conditions include socio-demographic elements such as precarious occupation/employment, education, self-help, early warning, number of floods experienced, length of residence, and proximity to hazards. The dynamic pressures and unsafe conditions constitute indicators of social vulnerability and are the focus of this chapter. As a whole, the graphic model demonstrates that although the impact of a disaster is most evident at the stage when it unfolds, the organization of disasters begins long before they occur.

Finally, it is essential to point out that this chapter is also, in part, a livelihood analysis. A livelihood analysis seeks to explain how a person obtains a livelihood by drawing upon and combining various resources (Wisner et al., 2004: 106). This chapter addresses how people's livelihoods are affected, including the impact on people's abilities to cope with exposure to the menace of flooding caused by changes or loss in livelihood.

## **Organizing social vulnerability**

### **Poverty/socio-economic status**

Natural disasters spiral into human catastrophes when they entrench the poverty that already exists and pulls more people down into poverty as their assets vanish, together with their means to generate an income. Therefore, understanding the role of income geography and institutions in insulating individuals from nature's shocks is vital to addressing threats of natural hazards. Studies in social vulnerability commonly highlight poverty/income as the main factor in explaining differentials in all aspects of disasters as low-income groups generally face more challenges during the phases of response, recovery, and reconstruction (Fothergill & Peek 2004).

Similarly, extant social science and disaster literature show that individuals with low socioeconomic status, the elderly, children, women, and ethnic minorities/immigrants are the most vulnerable groups (Clark et al. 1998). The poor and other minority groups are more likely to live in poor housing conditions and disaster-prone areas and mortality and morbidity from natural disasters are much higher among these subpopulations (Frankenberg et al. 2013, Doocy et al. 2013).

The risk of impoverishment is linked to a lack of access to the markets, capital, assets, and other mechanisms that can help people to cope and to rebuild (Shepherd et al., 2013). Responses to shocks and the ability to cope with vulnerability are mostly dependent on assets. Access to or possession of liquid assets such as farm produce, livestock, and other personal properties is essential to avoid impoverishment (Hulme, 2003). Liquid assets could also include resources such as social networks or public institutional resources.

The systematic explication of the full range of the discussions on poverty, its complex nature, including conceptual and measurement issues, is beyond the scope of this research; however, some of the concepts and definitions of poverty that are relevant to the discussions receive some attention here. Economic poverty immediately captures the type of poverty prevalent in Nigeria. Economic poverty refers to a deficiency in the number of financial resources a household has in order to meet its basic needs, defined in either absolute or relative terms.<sup>31</sup>

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<sup>31</sup> Absolute poverty refers to the set of resources a person must acquire to maintain a minimum standard of living for survival. It is therefore “a matter of acute deprivation, hunger, premature death and suffering (Schwartzman 2002). Relative poverty is concerned with how worse off an individual or household is with respect to others in the same society. It does not necessarily reflect vulnerability to mortality or acute suffering, but rather the level of inequality in each context.

In Nigeria, economic poverty is widespread and chronic. The distinguishing aspect of the chronic poor is the situation of always being poor, or where a household remains poor for a prolonged period or has a high probability of being poor in any given period (McCulloch & Calandrino, 2003). Information from various sources, including the Poverty and Equity Data Portal of the World Bank (2016) shows that more than 80% of Nigerians live below the International Poverty Line of US\$1.90 PPP.

Poverty or poor socioeconomic status is the strongest demographic feature of the research locations associated with the flooding. Income is associated with occupation, and it is a strong determinant of vulnerability to natural hazards. In the measurement of changes in social vulnerability between 1960 and 2010, Cutter & Finch (2008:2304) find that socioeconomic status and occupation remain the most consistent and recurrent factors of social vulnerability. Similarly, Wisner, Blaikie, Cannon, and Davis (2004:11) contend that there is a strong correlation between income and people's ability to protect themselves and, especially, to recover after disasters. In Chapter 5, the results reveal that most of the respondents engaged mainly in farming or fishing or both, and only at the community level. The lack of assets with which to respond to the challenges of flooding is symptomatic of the precarious and fragile livelihoods of the flood victims.

According to Mowafi and Khawaja (2005:261), a potentially efficient method of determining a poverty line is through the 'minimum income question' (MIQ). This method simply asks people how much they need to 'make ends meet' using a direct survey question. A subjective poverty line is obtained by comparing the monetary values derived from the answer to the actual household income (resources) after appropriate adjustments for household size and composition. Mowafi and Khawaja (2005:261) find that the MIQ has proved to be a robust

approach to determine minimum living standards. Although this was not a direct survey question in the research, during the free-ranging conversations that occurred after the focus groups, on average, those in Ocholonya said they needed about ₦17,000.00 (\$50.00) excluding health, disaster, or other emergencies. Most of them live in self-constructed huts and houses, some handed down through generations. Most of them also eat from their farms, so the cost of living is low. In Makurdi, respondents said they require about ₦35000.00 (\$100) to meet their needs, excluding emergencies. In Katsina-Ala, the respondents were split between the amount required to meet needs in Ocholonya and Makurdi. The Nigerian minimum wage monthly is ₦18,000.00 (\$60).<sup>32</sup> Apart from the fact that it falls short of the people's needs, only a few people in rural areas have access to formal or government employment to earn the minimum wage. Most Nigerians, especially those in rural areas, are engaged in the informal sector. On average, the actual household income for the respondents in all three locations is about ₦10,000.00 (\$30). There is a considerable disparity between the actual household income and what is needed to meet basic needs. While this was not an exercise in poverty measurement per se, it helps to provide both a visual and mental representation of the kind of poverty discussed here. Subsistence living on small scale farming and fishing, as is the case in the research areas, provides no potential to amass wealth. Those who possessed skills for other types of employment lacked the opportunity to put those skills to use because of the dearth of employment opportunities. Even when they did, the respondents stated that the remuneration was so insignificant that they remained in poverty.

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<sup>32</sup> Minimum wage is, “the lowest wage that an employer is allowed to pay the employee, the price floor below which workers may not be willing to sell their labor.” Any wage below the minimum wage; therefore, cannot guarantee a decent living for an employee. Being determined by law or by contract, Minimum wage is a mechanism of social dialogue using the instrumentality of collective bargaining or by law through enactment by the parliament.



The relationship between income and disaster impacts is visible in the increasing demand for safety when income rises (Toya & Skidmore 2007). The increase in demand is because income helps to accumulate assets. As incomes increase, individuals have more disposable income and resources to acquire necessary disaster precautionary measures. In recognition of the impact which poverty has on disasters, some development agencies and climate change communities are emphasizing poverty reduction in climate change adaptation programs (UNDP 2007).

The length of time that respondents have resided in the same locations despite the continuing challenges of flooding is another indication of poverty's role or low socioeconomic status in organizing social vulnerability to the flood event. The results show that most victims have resided in the same locations for upwards of five to fifteen years or more and have experienced at least five flooding incidents. A population that has resided in the same location for an extended period, such as the ones in the research communities, is regarded as a settled and not transient population. A settled population is at a higher risk for loss of accumulated assets and history. A report by the Nigeria Post-Disaster Needs Assessment of the 2012 floods by the federal government of Nigeria with technical support from the World Bank, EU, UN, and other partners find a decline in personal or household living conditions, livelihoods, and income, possible increase in the cost of living, as well as poverty aggravation arising from the losses caused by the disaster.<sup>33</sup>

For poor settled populations exposed to natural hazards, poverty is a vicious circle because when losses from multiple flooding events accumulate, returning to normal becomes an unattainable aspiration. When asked why they continued to live in these locations despite the hazard of flooding, many participants stated that they lacked the means to relocate. They had no

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<sup>33</sup> [https://www.gfdr.org/sites/gfdr/files/NIGERIA\\_PDNA\\_PRINT\\_05\\_29\\_2013\\_WEB.pdf](https://www.gfdr.org/sites/gfdr/files/NIGERIA_PDNA_PRINT_05_29_2013_WEB.pdf)

money or assets to aid in the process of relocation. For example, in the Gyado Villa location of the research, one single mother stated that there were nine individuals in her family and that she had been in four flooding events. When asked why she remained in the location, she responded that there was no other place for her to go. She stated that the house belonged to her brother-in-law, who abandoned it because of continuous flooding. When asked what she did when it flooded, she stated that usually from August, when heavy rainfalls begin, and the threats of flooding heightened, she would move to another location. According to her, depending on how bad the flooding was, and how long it lasted, she and her family would move from place to place to an upward of four different locations in one season. She explained in broken English, "when water de come I go to another place," meaning that when the rains begin, she moves away from the location. She pointed to watermarks on the walls, which went right up to the edge of the roof, to indicate the extreme extent to which the floodwater level rose during the flooding. Asked how she was preparing for the next flood she answered, "that one sef, I never prepare, when that time come, I go comot when water go I come back", meaning she is not prepared for that one yet, but that when the flooding comes, she will leave as usual and come back when it abates. Many of the respondents echo this plight.

While economic poverty adequately describes the condition of many Nigerians, the poverty of those in rural communities is better understood through a multidimensional approach. Multidimensional poverty conceives of deprivation not only as a lack of material goods but also as a deficiency in other vital areas such as opportunities, social capital, human capital, power, and voice. The World Bank's "Voices of the poor" study, the most extensive participatory poverty assessment of its kind, found that rather than income, the poor are more likely to describe their reality in terms of physical, human, social, and environmental assets (Narayan et

al. 2000). Although it was evident that the respondents wanted income to meet their daily needs, they also expressed poverty of opportunities and hardships in meeting basic needs. The poverty of opportunities and hardships relates to the earning capacity that can help the individual build some level of self-protection against the threats of natural hazards. One respondent in Ocholonya, who had two wives and eleven children, stated that his output would significantly increase if he had access to tractors to help in tilling the land. He said he was getting old, and the old farming implement was no longer good enough. He expressed fear that without access to school, his children will end up like him. A widow in Hausa-Quarters stated that she was at the risk of losing her home because of erosion caused by the flood. In Makurdi, respondents stated that they wanted the river dredged to give them access to more fishing opportunities. They needed good roads so they can sell their farm produce outside their communities. They wanted drainage systems to help in dealing with the challenges of flood hazards.

### **Isolation/marginalization of rural communities and the impact of Distance Decay**

Any study of political or socioeconomic interaction in space intrinsically involves an objective locational analysis of the centers of activities concerned. Location is that particular attribute of a place which permits a logical interpretation of how other places relate to it, from time to time, in a spatial context (Mitchell, 1979). The locational analysis enables us to evaluate the significance of a given place with other places. Isolation and marginalization of rural communities is best explained using the geographical concept or term 'distance decay'. Distance decay is a geographical term that describes the effect of distance on cultural or spatial interactions. The distance decay effect states that the interaction between two locales declines as

the distance between them increases.<sup>34</sup> Waldo R. Tobler's First Law of geography, which is related to distance decay, further emphasizes the impact of spatial distancing of rural areas. Waldo R. Tobler's First Law of geography is a simple statement that "all things are related, but near things are more related than far things" (Miller, 2004:285). Once the distance is outside of the two locales' activity space, their interactions begin to decrease. Isolation/marginalization of rural communities demonstrates how distant decay creates distancing in administration, contributing to social vulnerability to the threats of natural hazards.

The fundamental causes of human vulnerability include a lack of access to resources, information, and knowledge, as well as limited access to political power and representation (Mitchell & Scott, 2000: 717; Institution of Civil Engineers, 1995). In Nigeria, the federal government, as the seat of action or power, distributes resources to the LGAs. By sheer spatial positioning, many rural areas are spatially far from the state and federal governments. The spatial distancing creates administrative distancing which influences the equitable distribution of public goods. Consequently, rural communities often lack access to public resources.

A significant observation during the interviews and focus groups was the vast gulf between the government and the people at the grassroots. For example, on whether the respondents believe that the government provided enough assistance, the response was emphatically negative. However, one of the senior administrators interviewed stated that the flood victims received all the necessary assistance. He made no mention of the devastation from the flooding. According to him, the only problem was the refusal of flood victims to heed the warning to evacuate. There was a lack of meaningful involvement by the federal government in the running and functioning

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<sup>34</sup> <https://www.definitions.net/definition/distance+decay>

of the rural or local government areas. A full appreciation of the core vulnerability of the flood victims was absent.

Ocholonya is a voting block and participates in elections, as do the locations in Makurdi and Katsina-Ala. The community chief in Ocholonya stated that the only time they hear or receive a visit from the government is during the election period when someone visits to distribute and retrieve ballots. A SEMA staff corroborated this account when he stated that during the flood emergency, they could not go to Ocholonya because of the bad conditions of the roads. One respondent from Hausa-Quarters noted that before each election, candidates in his precinct would visit and promise to erect barriers around the river but that they never showed up after the elections. Many respondents recount the same experience in Ocholonya and Makurdi.

Isolation and marginalization of rural communities embody the social, economic, and political disenfranchisement and reflects the failure of resource delivery that arises from the gap in the federal government's administration of local governments. They experience much poverty, morbidity, and under-development and are more vulnerable to risks of natural hazards. Observations in the research locations show that they lack power, roads, schools, markets, and hospitals. Indeed, the vulnerability in the rural areas creates the type of vulnerability that Wisner (2013:258) refers to as 'generalized vulnerability.' Generalized vulnerability is where the poor suffer not only income poverty but also political marginalization, which means they have no say in the political decisions that affect them. Although most rural communities are a voting bloc, exercising the right to vote does not immediately translate to access to power or resources, which can aid in the accumulation of assets and minimize vulnerability. Factors that influence the isolation and marginalization of rural communities are considered in detail under Remoteness in Chapter 7.

### **Lack of social/physical infrastructure**

The vulnerability in the research locations results mainly from the absence of infrastructure, including roads, utilities, hospitals, schools, and emergency response facilities. These infrastructural components fall under the definition of lifeline and are the networks that enhance the circulation of people, goods, services, and information upon which health, safety, comfort, and wealth depend. The absence of social and physical infrastructure has meant that rural dwellers lack the essential resources for individual or collective progress.

In the preceding section on poverty/socioeconomic status, poverty was strongly associated with social vulnerability. Here, existing literature points to a positive relationship between infrastructure investment and economic growth and infrastructure development is reinforced as a tool for poverty alleviation. Other research on poverty alleviation focuses on empowering and increasing the number of poor people who participate in decision-making by providing access to infrastructure, including transportation. For example, in Latin America, Estache, Foster & Wodon (2002) examined the role of infrastructure reforms in poverty alleviation by reviewing both macro and microeconomic data and found that privatized infrastructure development tended to alleviate poverty if the poor participate in its benefits (access to jobs, etc.). Similarly, Stivastava and Shaw (2013) analyzed the effects of different forms of public investments on growth and rural poverty in various Chinese provinces. They found that road infrastructure had a greater impact on poverty than rural education, irrigation, agricultural research and development, power generation, targeted poverty alleviation, and telecommunications.

While Nigeria, as a country, suffers from a lack of infrastructure, Benue State is one of the states with the worst infrastructure deficit. The provision of public services in rural areas is often poor, where public services exist at all. A policy of decentralization was adopted, which in

theory should have improved access to services. However, Moti (2011) found that decentralization was not used to create rural service centers. Instead, ruling parties at both state and federal levels have used it to renew or consolidate their power. Lack of funding, the inability of rural people to hold their representatives accountable and corruption compounded the problem of decentralization (AFCAP, 2014:7).<sup>35</sup>

Therefore, the Ocholonya location lacked any significant infrastructure. Makurdi is a little different because it doubles as the headquarters of Makurdi LGA and the state capital. As a result, Makurdi has some access to the resource allocation from both the state and federal governments. The following section discusses three infrastructures that have a significant impact on the organization of social vulnerability in the research locations. They include neglect of road networks, poor education, and failure of early warning.

### **Poor road networks as a source of vulnerability**

Growing contemporary research provides empirical knowledge concerning transportation infrastructure as a facilitator and a vital contributor to economic development (Bofinger, 2011; Gwilliam, 2013). Notably, there is extant literature that focuses on the relationship between road networks investment and economic development in developed countries, including the United States and the United Kingdom (Masarova & Iyanova, 2013). Developed countries, according to international benchmarks, typically have 'core infrastructure' stock such as roads, rail, ports, airports, power, water, ICT, which are equal in value to about 70% of GDP. Power and transportation infrastructure usually account for at least half of the total value. Research shows

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Africa Community Access Program. *The Failure of Rural Transport Planning and Policy to Support Women's Entrepreneurship*. Institute for Sustainability Solutions Research, Plymouth University. <https://assets.publishing.service.gov.uk/media/57a089f140f0b64974000336/Entrepreneurship-AFCAPgen127-v140416.pdf>

that shipping volumes of raw materials to the factory and finished goods to the market on time depends on access to a viable rural transportation infrastructure system.

Many scholars recognize road network infrastructure as necessary for economic growth, not only for developing countries but also for industrialized economies (Lakshmanan, 2011). Research shows a relationship between investment in transportation infrastructure and a country's socioeconomic and political development (Akhmetzhanoy & Lustoy, 2013). There is also evidence that an insufficient network of roads is one of the many critical infrastructural deficits, each of which limits economic growth and democratic achievement (Rotberg, 2007). Road infrastructure investments enlarge markets and lower trade barriers while increasing the nation's wealth and improving its people's living standards. According to Osayomi (2013), road transportation infrastructure investment was not a well-recognized subfield of economic development for much of the 20th century. It was not as an analytic component in the early development of economic literature, which did not differentiate capital from factories. The under-representation of road transportation infrastructure in early economic literature resulted from the way traditional economic models lump roads and other production components together as capital. Transport infrastructure includes roads, air transport facilities, railways, maritime infrastructure (inland waterways and ports), and urban transportation (which spans across the other sub-sectors).

Nigeria is an emerging economy with an exploding road infrastructure requirement. Over 90 percent of surface transport of goods is by road, which means that Nigeria relies heavily on transportation by road. According to the 2015 National Integrated Infrastructure Master Plan Report, Nigeria has fallen short of international benchmarks, and Benue State is one of the States in Nigeria with a high-level deficit of road networks and bridges. Since 2014, the length of the



constructed road is only 1,632 kilometers in Benue State, according to the Nigerian Bureau of Statistics.<sup>36</sup> The rural transport networks in Nigeria, as noted earlier, include a wide range of unpaved roads that link rural communities to other rural and urban communities, are of low quality with a significant proportion becoming impassable in the rainy season.

In rural areas in Nigeria, farming is the primary source of livelihood. Starkey et al. (2007) argue that for Africans to gain from the tremendous social and economic benefits of road infrastructure, people need to be within a reasonable distance of a motorable road. Dorosh et al. (2010) find a high correlation between agricultural production and proximity (as measured by travel time) to urban markets. According to them, with a shorter travel time to city markets, agricultural output was far higher in rural areas. This shorter travel time to markets suggests that infrastructure improvements, which reduced travel time, made a difference to the overall output. Dorosh et al. (2010) conclude that low population densities and long travel times to urban centers sharply constrain agricultural production and that reducing transport costs and travel times to rural areas would expand the available market size for the sub-Saharan African region, including Nigeria.

Similarly, Starkey et al. (2007) noted that rural transport services are often inadequate, and that passenger and goods transport needs improving to stimulate rural economies and reduce poverty. Where transport services exist, they are often costly and overcrowded, although there is an increasing level of service provided by motorcycle taxis, which makes rural communities feel more 'connected.' The lack of transport services in rural areas is significant since many households in rural areas cannot afford personal vehicles and need broader transport systems.

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<sup>36</sup> <http://www.nigerianstat.gov.ng/>

Rural areas in Nigeria experience widespread poverty and other issues associated directly with a lack of essential services, lack of assets and lack of income, and indirectly with inequality and discrimination (Adenipekun, 2013:257). Those classified as 'rural poor' and living on less than \$1 (US) per day make up two-thirds of rural people in Nigeria. Associated with this is a trend of rural-urban migration. As noted in the previous section, in the three locations of the research, poverty is prevalent. According to Adenipekun (2013:257), the 'average rural dweller irrespective of age or sex desires the opportunity to vacate the rural environment for city life.'

Ocholonya has the most significant infrastructure deficit and, as such, has the highest level of poverty. Ocholonya lacks paved roads, and the people move along dirt tracks. Participants stated that because of the poor road network, they are very isolated from other communities. The issue of good roads, according to them, was an essential measure they needed. Other initiatives would not be successful without first improving the road infrastructure, they stated.

*Figure 28 Road leading into Ocholonya*



Source: Fieldwork 2017

*Figure 29 Road leading from Ocholonya*



Source: Fieldwork 2017

Bridges are also a part of road network infrastructures. In Katsina-Ala, a 40-year-old bridge constructed in 1978 is key to disaster response in the event of a disaster, both for evacuation and purposes of delivery of materials. However, it is so neglected that not even routine maintenance does not occur. There are failed portions at the pedestrian ways, cracks at the embodiments, and the pillars are shaky. There is a concern that the bridge may not cope with another major flooding event like that of 2012.

Road transportation infrastructure supports social programs, including schools, hospitals, and employment (Pradhan & Bagchi, 2013). Lack of maintenance of existing road networks and the failure to construct new ones are part of the discussion in the next chapter. For rural areas to thrive and residents to experience development, they need to be able to process and transport their products cheaply and quickly. Empowering rural communities in this way requires building and maintaining all-weather roads.

## **Poor education as organizing social vulnerability**

Education is increasingly gaining recognition as a means for poverty alleviation, vulnerability reduction, and adaptive capacity building. According to Mutarak, R., & Lutz, W., (2014:41), by strengthening human capacity primarily through education, societies can develop the most effective long-term resilience to dangers of climate change by increasing human capacity. When encountering natural hazards or climate risks, educated individuals, households, and societies are better empowered and are adaptive in their response to prepare and recover from disaster events. Individuals who have an education are significantly more resilient to detrimental economic and psychosocial health impacts and more likely to have access to and act upon varied hazard information from preparation to recovery (Ibid).

The negative impacts of hazard events can be reduced by education in direct and indirect ways (Hoffmann, R. & Blecha, D., 2020:1). Formal education is considered a direct and primary way to acquire knowledge, skills, and competencies to build adaptive capacity. Directly, through formal education and learning, people gain knowledge and abilities, skills, and perceptions that can help them to prepare adequately and cope with the consequences of disaster impacts. Risk perception, skills, and knowledge can indirectly reduce poverty, improve health, and promote access to information and resources. A significant body of work on the effects of education on health makes a direct association between education and health, which in turn creates a direct correlation between education and disaster. Lutz and Skirbekk (2013) summarized some of these works and surmise that there is enough evidence to assume a direct functional relationship between education and disasters. Education, directly, is deemed to influence disasters in the following ways:

- Formal education has a lasting impact on the synoptic brain structure (Kandel, 2007). Therefore, learning experiences acquired through formal education enhances cognitive skills (Neisser et al. 1996, Nisbett 2009, Reynolds et al. 2010). Specifically, literacy and numerical skills, including general skills such as abstract thinking acquired through formal education, create better understanding and enhanced ability to process risk information, including warning messages as well as weather forecasts (Mileti and Sorensen 1990, Spandorfer et al. 1995).

- Education is associated with problem-solving skills (Moll, 1994; Ishikawa & Ryan, 2002; Schnell-Anzola et al., 2005). In emergency or disaster situations, therefore, educated individuals have a better chance of a productive response.

- Knowledge acquired through formal education enhances the capacity to plan and improve resource allocation (Thomas et al. 1991, Glewwe,1999).

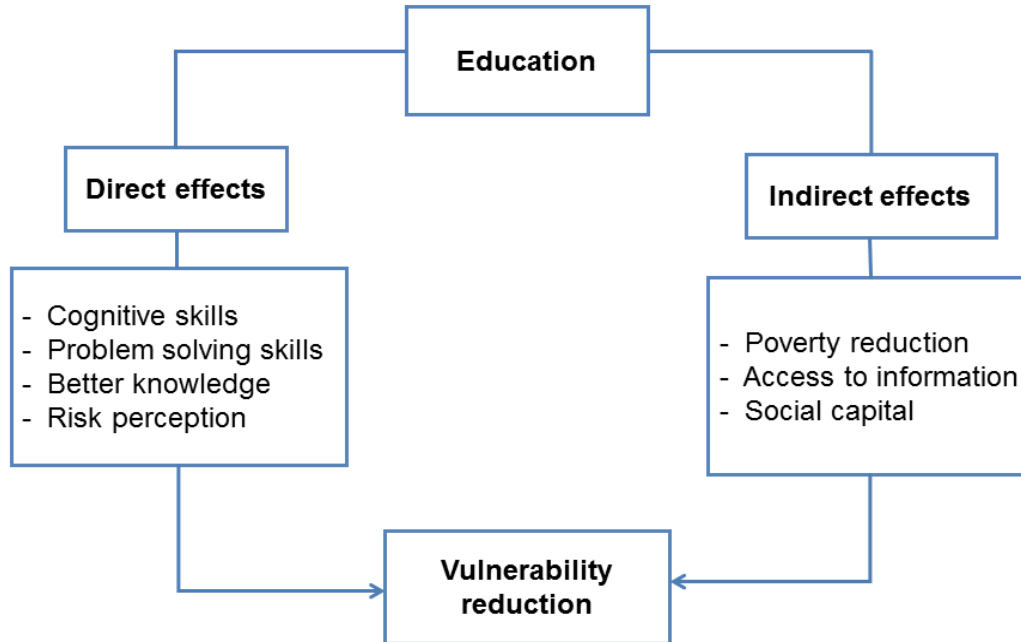
- Education can help to reduce the vulnerability to risks of natural hazards by enhancing how people understand threats and how to respond to such risks. According to Ainuddin et al. (2013), individuals with higher education are better aware of earthquake risk. They are also better situated to engage in disaster preparedness (Paul & Bhuiyan, 2010).

- Indirectly, education can also reduce vulnerability in other ways. For example, education can give individuals and households access to material, informational and social resources, which can help reduce their disaster vulnerability (Hoffmann, R. & Blecha, D., 2020:12). The following are some of the ways that education can indirectly influence disasters.

- a. Education generally increases earnings and, therefore, can improve socioeconomic status (Psacharopoulos 1994; Psacharopoulos & Patrinos 2002). Improved socioeconomic status helps people to accumulate assets and the resources to make better and safer decisions to live in low-risk areas with quality housing. Increased income enables individuals to implement disaster preparedness and recovery measures.
- b. By increasing socioeconomic resources, facilitating access to information, and enhancing social capital, education can promote vulnerability reduction and adaptive capacity. Education strengthens social capital and social support and encourages more extensive social networks (Department for Business Innovation & Skills, 2013). In times of emergency, people who are part of large and well-established social networks and friendship groups have a higher chance of receiving informal warnings and, consequently, are more likely to confirm disaster predictions and engage in response (Mileti & Sorensen 1990). Also, social capital and social networks increase the propensity to evacuate and facilitate relocation and recovery (Airriess et al. 2008).
- c. Individuals with higher education usually have a better opportunity for diversified communication linkages and have better access to critical/useful information (Cotten & Gupta 2004, Wen et al. 2011, Neuenschwander et al. 2012). According to Rodriguez et al. (2007), individuals with higher education can access weather forecasts, early warning information, and other

types of technologies that allow individuals to prepare and respond to the threats of natural hazards adequately.

*Figure 30 Flowchart of the processes through which education can reduce vulnerability*



Source: Muttarak, R. & W. Lutz. (2014).

A study of the 2004 Indian Ocean tsunami looked at the specific question of how education impacts the immediate and longer-term impacts of a catastrophic natural disaster. The study found that education was the most significant variable to define vulnerability (Frankenberg, Sikoki, Sumantra, Suriastini & Thomas, 2013). Households whose members had more education were less vulnerable to the impacts of the tsunami. Over the longer term, education played an even more significant role in coping with the disaster. Those that were better educated were far less likely than others to live in a camp or other temporary housing. The educated were more likely to move to private homes, stay with family or friends, or rent a new home. Compared to the cuts made by those with little education, people who were better educated were more able to minimize dips in spending levels following the tsunami. Also, five years after the tsunami, the

better educated were in better psychosocial health than those with less education. The research concluded that people with better education are better able to mitigate the debilitating consequences of natural hazards and to embrace new opportunities in the aftermath of even a major large-scale and unanticipated disaster. In sum, those who have invested more in education are better prepared to explore new opportunities and cope with challenges after a major disaster and may also have better access to financial and social resources. Therefore, education is associated with higher levels of resilience over the longer term.

Results from this research show that most of the respondents had no education beyond elementary school. In fact, in Ocholonya, more than 60% of the respondents had no formal education. The overall state of education in Nigeria is a perennial source of criticism. Rural education suffers from limited functional or work-oriented education and disregard for handicraft and technical subjects (Ele, 2006; Ijere, 1992). Massive infrastructural deficit exists in rural education development in Nigeria. Most rural schools are not well built. They are shabby, ill-equipped, poorly staffed, and very old with damaged roofs and walls. Chairs and tables are usually insufficient; libraries do not exist in rural schools, and there are no schools at all in some places.

A teacher in one of the research locations stated that her pupils sat on mats on the bare floor to receive lessons. Schools in Nigeria also experience problems of insufficient academic staff and non-payment of academic staff, among others. During fieldwork, teachers in Benue State had not been paid for upwards of 12 months and have been on strike for that length of time. The morale amongst the teachers was low, and most of them were actively engaged in trying to find other sources of income. In Ocholonya, the four-classroom school was severely damaged by the flood in 2012 and the subsequent herdsman attack. During fieldwork in 2017, the community



effort to put up another structure was still in progress, which means that no child in that community has access to formal education. Figures 31 and 32, are images of both the old school and the new one under construction.

*Figure 31 Remaining structure of old school left after the flooding*



Source: Field work, 2017

*Figure 32 New school under construction through community effort*



Source: Field work, 2017

At the societal level, a better-educated society enjoys more significant economic growth (Lutz et al. 2008, Crespo Cuaresma et al., 2013), and higher life expectancy and a higher degree of democracy (Lutz et al. 2010). Consequently, better-educated societies have better social, economic, and institutional capabilities necessary for successful adaptation to natural hazards and disasters. From the review in this chapter, it is reasonable to conclude that education plays a significant role in reducing vulnerability to the risks of natural hazards. Educated individuals and societies are reported to have better preparedness and response to disasters, suffer lower negative impacts, and can recover faster from the impact of a hazard event (Muttarak & Lutz, 2014). The significance which education has in minimizing vulnerability to the risks of natural hazards suggests that public investment in empowering people and enhancing human capacity through education can have a positive externality in reducing vulnerability and strengthening adaptive capacity, especially to the threats of natural hazards. The next chapter considers the neglect of early warning in Nigeria and its influence in creating exposure to the risks of flooding.

### **Neglect of early warning as social vulnerability**

A crucial part of the management of disasters is early warning and evacuation. Early warning is an essential resource in the race against the threats of natural hazards. Early warning about an impending natural hazard can enable action in advance to minimize the event's risks and impacts (Basher, 2006). In the current UN-ISDR terminology, early warning refers to the provision of timely and useful information through publicly known institutions, thus allowing individuals exposed to a hazard to take action to avoid or reduce their risks (UNDRR, 2004). The 2004 Indian Ocean earthquake and tsunami drew intense attention to early warning systems and preparedness questions. Notably, this led to the call by the then United Nations Secretary-

General in 2005 for a global warning system for all hazards for every country. In 2006, he asked the International Strategy for Disaster Reduction (ISDR) secretariat to coordinate a global survey of early warning systems and identify gaps and opportunities, as a basis for developing such global capacities (UN 2006). Critical components of early warning systems include risk knowledge, monitoring and warning services, dissemination and communication, and response capability (Navalgund, 2014:935; UNDRR-PPEW 2005).<sup>37</sup> An effective early warning system must have a sound scientific and technical basis, and most importantly, a strong focus on targeting the people exposed to natural hazard risks and be based on a systems approach that incorporates all of the relevant factors in that risk, whether arising from the natural hazards or social vulnerabilities and short-term or long-term processes (Basher, 2006:2167).

The importance of effective construction of early warning messages has rich literature developed around it, and authors like Parker, Tunstall, and McCarthy (2007), Handmer (1997), and Parker (1992) have all emphasized the importance of flood warnings in energizing immediate response to an event. For example, research reveals a significant decline in fatalities from major tornadoes in the United States in the last century as a result of early warning (Simmons & Sutter, 2005). Similarly, Sudo, Kameda, and Ogawa (2000) note that death from natural hazards of all types dropped from an annual average of 1,941 in the 1950s to just 200 in the 1980s (a downward trend that continued until the 1995 massive Kobe earthquake) after the Japanese government began to mitigate various natural hazards aggressively and adopted the

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<sup>37</sup> United Nations Disaster Risk Reduction- Platform for the Promotion of Early Warning

early warning strategy in the 1940s. Other works relating to the recent progress in early warning systems include Escaleras and Register (2008), Sorensen (2000),<sup>38</sup> and Mileti (1999).

The death toll in the 2012 flooding was high and partly attributed to a lack of early warning. In the locations of the research, early warning took three forms. The first was by word of mouth messaging undertaken by the staff of SEMA who went through communities and informed individuals about the impending flooding risks. The local or community chiefs informed their communities of the impending event. There was also the use of the public address system (PAS), where the staff of SEMA drove around specific areas and announce the impending flooding event. Finally, early warning occurred through radio announcements.

Data from the research shows that 98% of the respondents did not receive an early warning. The 2% who received it failed to heed it because according to them, the early warning came too late and that even if it came early, the only option they had was to ride the storm out since they lacked resources to evacuation. Ocholonya and Hausa-Quarters were the most vulnerable regarding the receipt of early warnings. Ocholonya was deemed too remote and not accessible enough for early warning communication. A respondent in Ocholonya stated, "I never heard anything before the flooding," "only after the flooding we heard it came from Cameroon."

In Wadata, a group of female rice mill workers, who lost everything in the 2012 flood stated that they received no warning before that event. During the interview (conducted in 2017), I asked if they had received any flood warning for 2017, which rumor had was impending. They said they had not. In an earlier interview with the State Emergency Management Agency staff,

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<sup>38</sup> A great deal of information on mitigation efforts and their effectiveness can be found at the University of Colorado's Natural Hazard's Center at <http://www.colorado.edu/hazards/>.

he stated that warning about the impending flood was sent out to all flood-prone locations. When informed that a group of women in Wadata said that they received no early warning, he insisted that the community leaders were instructed to convey the warning message. When pressed further that perhaps the clan heads had not sent out the alerts, he countered, "okay, we will embark on sensitization." When the agency sends out announcements on impending disasters, the research finds that there is no follow up to ensure that the messages are received and acted upon. In the interview with two senior officials of the National Emergency Management Agency at the national office in Abuja, one of the officers stated that the problem was not with the dissemination of early warnings, but instead that the people do not listen to the warnings. According to him, "the people are stubborn. They do not listen. You tell them to leave, and they stay. What can you do?"

In Makurdi, respondents revealed that after the 2012 flooding, an emergency warning system (siren) was installed on the bank of the Benue River at Wurukun but was never activated. The respondent who lived by the installation stated that "the Ministry of Water resources came and installed the equipment after the flooding and since then, nobody has been here to activate it and as you can see, it is slowly falling apart." Figure 33 shows the abandoned early warning equipment (siren) overgrown with weeds and debris. A physical inspection of the unit found it in a state of disrepair.

*Figure 33 Early warning equipment, overgrown with weed and debris in Wurukum*



Source: Fieldwork 2017

One of the goals of early warning is to get individuals to evacuate to safer locations. The State Emergency Management Agency identified shelters, most of them in elementary schools, in various locations. In Ocholonya, a school in a neighboring village was identified as a shelter. However, most of the respondents stated that they did not know about the location, and those who knew had no resources to get to it. The shelter was about ten kilometers from the community, and the victims had no transportation to get there. Also, the shelters had no amenities or shelter materials such as blankets, sleeping bags, and food supplies.

For early warning systems to be useful to the community, it must meet a community's needs by providing timely, accurate, and reliable information as well as ensuring enough lead time to allow people to take suitable action (Guru & Santha, 2013: 4). Also, for early warning to be efficient, effective, or even relevant, some necessary infrastructure must be in place. Such infrastructure must include communication, transportation, and evacuation. In this respect, access to resources becomes critical. Here, factors such as power and access to resources come to play essential roles in the effectiveness and outcome of early warning systems (Guru & Santha, 2015;

Balluz et al., 2000; Aguirre, 1998). Power and access to resources were undoubtedly in short supply during the flooding disaster.

### **Self-help: An emergent option when infrastructure fails**

Self-help in this research is the exercise of informal social control over an unfolding disaster situation in the absence of formal institutional support. According to Yoon (2012:824), where social protection programs are non-existent or poorly targeted and inefficient, poor or socially vulnerable populations are less likely to have access to critical resources during disaster events. Thus, they are forced to cope with shock by seeking other forms of assistance, and in such instances, they often resort to self-help. Self-help is then a necessary proactive measure taken by an individual in the absence of institutional infrastructure.

The research finds that in the absence of organized disaster resources, the respondents resorted to self-help. There were spirited efforts individually, but mostly collectively, to develop coping measures during the flooding. Often self-help is confused with self-sufficiency. Although they are both critical components of community resilience, they have different realities. According to Chandra et al. (2010:33), self-sufficiency involves increasing the capacity of individuals, communities, or institutions to become more self-reliant.

Conversely, in self-help, individuals lack resources and rely on continually improvising to adjust and readjust to unfolding hazard events and disaster needs. The significant difference between self-help as used in the research and self-sufficiency is that in self-, the "self" can apply to the individual who stockpiles supplies, the household that develops a household emergency plan, or the community that expects to manage an emergency without assistance. On the other hand, self-help is an 'only' option in the absence of institutional support. While self-sufficiency is

associated with security and access to resources, where individuals are a step ahead in the event of an unfolding disaster, in self-help, individuals face a high degree of insecurity, lack access to resources, and as a result, are often a step behind a hazard event.

In developed countries, many see the exercise of self-sufficiency in the form of personal responsibility and neighborly concern as a superior substitute for government intervention. Most disaster or vulnerability literature in developed countries consistently points out that the government (in developed countries) cannot hope to match the energy and resourcefulness of citizens cooperating informally or through voluntary associations. For example, Landy (2008: S185) argues that if people built their houses to withstand storms and floods, respond promptly to evacuation orders, and offer rides to elderly or disabled neighbors, such actions would eliminate the need for response assistance and then governmental and philanthropic organizations can spend their resources elsewhere. Unfortunately, the victims of the flooding lack access to support in that way, and so self-help here cannot be understood as a simple civic engagement where the flood victims can exhibit the same level of agency in the face of a natural hazard event.

Traditionally, individuals who are at risk are less empowered and more vulnerable to increased harm during a hazard incident because they are unable to take advantage of disaster preparedness planning, response, and recovery activities normally afforded (Wingate et al., 2007). As Norris et al. (2008) indicated, the hardest hit by disasters are those who already find it challenging to meet their family's needs. They cannot assume responsibility for their safety in isolation of institutional support in the event of a disaster. The flood victims drew on community cooperation to help themselves, based on the experience of previous flooding and local knowledge. For example, in Ocholonya, there was an ongoing community effort to rebuild the



only school in the community. In Wurukum, Makurdi, there was a community effort to petition the state government with regards to an abandoned World Bank water channel project that was creating additional flooding in the community. All attempts to combat the flooding or to recover from its impact were joint ventures. A study conducted in Makurdi, one of the research locations, finds that self-help was an essential strategy in responding to the flooding (Shabu & Tyonum, 2013).

*Table 11 Some self-help and coping measures adopted by residents in Makurdi*

Coping measures adopted by residents	Respondents	Percentage (%)
Creation of water channels	98	32.7
Use of sandbanks	56	18.7
Sand fill sacks	28	9.3
Frequent removal of sand from blocked drainages	109	36.3
Fumigation of stagnant floodwaters	05	1.7
Face-to-face awareness of flooding	04	1.3
Total	300	100

Source: Shabu & Tyonum (2013).

The research highlights an association between self-help and the notion of large families. While the broader consensus is that a larger family contributes to social vulnerability since more resources is required for sustenance, some studies emphasize the benefits of large families in preventing social isolation. According to the latter, large families are beneficial to combat social isolation in cases where social contacts with family, friends, neighbors, and contemporaries are infrequent and superficial. However, other vulnerability studies associate large family sizes with low and inconsistent economic growth rates, which has debilitating effects on many aspects of household welfare. For example, Cutter, Boruff & Shirley (2003:250) find that families with

large numbers of dependents have limited finances, which affects resilience to and recovery from hazards. The research shows that more than 70% of all respondents have more than five people. Ocholonya has the highest SoVI score of 0. Nevertheless, the respondents see their large families as advantageous and consider them beneficial in many circumstances, such as having more hands to help on the farms and to respond to disaster needs.

### **Social capital**

Social capital refers to features such as networks, trusts, and norms that enable communities to coordinate their social and economic endeavors. Bankoff (2015:143) notes that expressed in the inherent capabilities of communities to act for their collective benefit is the notion of social capital. Social capital reflects the confidence of an individual that a contribution given freely will be reciprocated at an appropriate time - a moral code enforced by the development of group relations. Where there is no infrastructure, social capital becomes even more valuable. For example, where institutional assistance was absent, or at best inadequate, a strong family network provided the social, psychological, and emotional support that is often critical in the face of an unfolding disaster. Social capital encompasses the networks and relationships between individuals and social groups that facilitate economic wellbeing and security. The growing literature on social capital makes an important distinction between three kinds of social capital: bonding social capital, bridging social capital, and linking social capital. Bonding social capital is most applicable to the research, and it is related to ties and networks among homogeneous groups, including those based on family, ethnicity, religion, etc. Typically, but not always, such ties are dense and depend on high levels of inter-personal trust and, as such, may be useful for 'getting by' in life. On the other hand, bridging social capital refers to social ties across diverse groups such as ethnic, regional, socioeconomic, etc. and maybe more useful for 'getting ahead.'

Linking social capital refers to ties and networks within a hierarchy based on differences in social position or power, including the resources and networks embodied in the communities' relationship to the State or other agencies. The communities' individual or collective efforts to respond to the flood disaster was a function of bonding social capital.

Previous research in coastal environments demonstrates that social capital is an essential element for coping with vulnerability to hazard in the present day. For example, Tompkins and Agder (2003) show how communities in the Caribbean find strategies to manage risks through local networks and interactions. Although many victims adopted self-help strategies to mitigate the effects of the disaster, their efforts were grossly inadequate. Also, while the respondents may have connections within their villages, they have little bridging social capital linking them to other communities or formal institutions. Participation rates within village organizations are higher than those for organizations linking individuals and communities to others outside their communities. The latter has more value and is more desirable in the face of natural hazards. In Ocholonya, there is no motorable road in or out of the community. It is almost impossible to build a network beyond the community. To acquire social capital that bridges, and links communities require its development as a more viable and sustainable alternative to self-help. In Nigeria, self-help is the most widespread strategy for getting by. People depend on their capabilities and collective communal support to respond to different kinds of challenges. However, the social capital from which the respondents drew was more ad hoc than resilient. Nigerians lack the essential resources to build a strong and resilient social capital base, especially bonding and bridging social capital, which requires access to resources. If the flood had persisted longer than it did, the efforts which the victims put forward would be insufficient to achieve the level of self-protection that they did, and the mortality would have been higher. Therefore, while

Nigerians get by on social capital, it is fragile and bound to collapse under any prolonged hazard event. Social capital must be rooted in established resources such as finances, knowledge, as well as social and financial infrastructure.

## **Conclusion**

This chapter addresses the first part of the research argument by establishing how a variety of social processes organized the 2012 flooding in Benue State, Nigeria. The chapter began by introducing an adaptation of the progression of the vulnerability model of the 2012 flooding (from Wisner, Gaillard, and Kelman, 2012: 32). The model advances the idea that understanding disasters requires us to trace the connections that link the impact of a hazard on people to a series of broader social factors that happened in the past and which underscored the event. The analysis used patterns and themes that emerged from the findings in Chapter 5 to trace these connections. An analysis of the indicators of social vulnerability from the research locations substantiates the research argument by establishing that poverty/socioeconomic status, unemployment, lack of access to early warning, absence of infrastructure, and poor education all contributed to organizing social vulnerability to the 2012 flood disaster. The length of time that most residents have lived in these locations, which is an average of ten years, was also significant. Furthermore, the multiple incidents of flooding which the respondents experienced establishes a high degree of vulnerability in the communities.

Self-help in the research involved emerging, ad hoc efforts in response to a desperate need for self-protection during a hazard event, where institutional assistance was unavailable. The challenges faced in the communities made self-help, not just *an* option, but the *only* option for most victims of flooding. Self-help is not the same as self-sufficiency, which occurs through access to critical resources or infrastructure. As flood victims exercised self-help, it is essential to

note that such efforts were not pre-determined and organized to intervene and manage one's circumstances. Self-help for the victims was instead a necessary and desperate last resort for self-preservation in the absence of institutional infrastructure. People will always struggle to survive for as long as they can, no matter the challenge until such a time that they are no longer able to do so. The failure of institutional infrastructure necessitated individual and collective community attempts to minimize the impact of the flooding. The provision and equitable distribution of social and physical support would empower people to protect themselves from the threats of natural hazards.

# Chapter 7

## The 2012 Flooding in Nigeria: A Profile of Institutional Neglect

### Introduction

The predicate of the research rests on the argument that social vulnerability produced the conditions of the 2012 flooding in Benue State, Nigeria. Chapter 6 undertook an in-depth analysis of critical socio-demographic features of the research locations that constitute social vulnerability. The analysis demonstrated that social vulnerability, indeed, influenced the disaster. Social vulnerability constrained individuals' options to make critical decisions for self-protection when faced with external threats of flooding because they lacked access to important essential resources. Social vulnerability restricts coping strategies where institutional, social, and physical infrastructures are unavailable or inadequate. Social vulnerability in the research is not an independent phenomenon. The research finds further that Social vulnerability is created by Institutional Neglect. That social vulnerability is influenced by Institutional Neglect is the second part of the research argument which this chapter addresses.

An important note reiterated here, which was also made in Chapter 1, is the distinction between 'lack of resources' and 'lack of access to resources.' Lack of resources refers to conditions where resources are completely unavailable or insufficient, making it difficult or impossible to address the challenges that arise from exposure to the risks of natural hazards. Lack of access to resources, on the other hand, refers to situations where, for various bureaucratic interventions, resources that are available, are made inaccessible to communities in need. Lack of access results from the failure of bureaucratic institutions to equitably distribute public goods, which can help build resilience to the threats of natural hazards. Public goods

comprise physical and social infrastructures that enhance the ability of households to cope with hazard events. The absence of infrastructure, the accumulated deterioration of the existing physical condition of infrastructure, the attendant declines in the levels of service, rising inequality, and environmental deterioration are all functions of Institutional Neglect. The failure to equitably distribute public goods is the core operative of Institutional Neglect. Generating a profile of Institutional Neglect is vital for establishing the root cause of the flooding.

Conceptual and analytical frameworks of Institutional Neglect were developed in Chapter 3 to help understand the link between social vulnerability and Institutional Neglect. The framework of Institutional Neglect includes such factors as poor infrastructure, remoteness, endemic corruption, weak governance, and mass poverty. This chapter adopts each of these dimensions of Institutional Neglect as a focusing lens to guide the analysis. The chapter demonstrates how Institutional Neglect organizes social vulnerability in the research. The frameworks of Institutional Neglect are also useful for a broader analysis of other kinds of disasters originating from human-made hazards or natural hazard sources. Since every disaster is different and no two disasters are entirely the same, the particular Institutional Neglect factors that may be useful for a specific disaster analysis would depend on each disaster type.

Two factors of Institutional Neglect, 'poor infrastructure' and 'remoteness' are the start points for the analysis in this chapter. The analysis begins with 'poor infrastructure' because it both captures and reflects the widespread impact of Institutional Neglect. 'Poor infrastructure' as a function of Institutional Neglect is evidence of lack of development. The absence of Infrastructure, or the poor state of existing ones, is often the most significant marker of institutional failure and a contributor to social vulnerability. A discussion on the role of infrastructure is essential as a starting point of the analysis in this chapter since it provides a

valuable context for understanding how the other factors of Institutional Neglect produce and reproduce social vulnerability. The discussion on 'remoteness' follows immediately after 'poor infrastructure' to highlight the impact of neglect on rural communities, especially in the absence of infrastructure. 'Endemic corruption' is the last factor of Institutional Neglect to be discussed. It brings the analysis together by explaining how all the other factors are produced and reinforced. It has the most significant intersection with all the other factors and provides an essential context for understanding social vulnerability to threats of flooding in this research.

### **Poor Infrastructure and disaster**

Poor Infrastructure is the factor that most starkly reveals the effects of Institutional Neglect. Infrastructure represents the set of interconnected structural elements that provide the framework which supports an entire development plan. Development plans and projects all depend on sound and viable infrastructure, and numerous studies point to a direct relationship between investment in public infrastructure and the quality of life experienced in a locale (Varun Chotia & Rao, 2017; Saxena, Chotia, & Rao, 2018; Khanna & Sharma, 2018).

The concept of infrastructure has several meanings and dimensions associated with it. Infrastructure encompasses the necessary organizational and physical structures needed for the operation of society and includes such elements as governance, industries, buildings, roads, bridges, and health services. Infrastructure also represents the supporting constellation of products, services, and facilities necessary for an economy to function (Sullivan & Sheffrin, 2003). Furthermore, infrastructure may also be considered an objective and a means of achieving objectives or a set of objectives, including those that help achieve a stable and prosperous society. Infrastructure is a vital criterion for judging the integrity of the institutional or bureaucratic system of a country or region.



Infrastructure is significant for minimizing or eliminating the impacts of natural hazards, and the neglect of infrastructure development and maintenance enhances the potential for disaster. For example, in the course of an extreme environmental hazard event, whether the situation becomes a disaster is influenced by the availability and state of infrastructure. The World Risk Report (2016)<sup>39</sup> finds that in the event of extreme natural disasters, fragile Infrastructure, or the complete absence of infrastructure can have grave consequences for the local population. For example, weak infrastructure can delay the practical potential for those affected to help themselves and hamper humanitarian assistance by local or international authorities or agencies. According to the World Risk Report, the challenges that relief agencies face are on the "last mile" of the logistics chain, which includes organizing transportation despite ruined roads or bridges, and ensuring fair distribution when, for example, water, food, and shelter are scarce. Functional road networks can provide ready access for evacuation or to quickly supply relief aid to affected communities. When roads are unusable or destroyed, there can be a difference between life and death as entire communities or regions can be cut off from support. The breakdown of nodal points in networked infrastructures, such as airports or power plants, can reverberate impacts beyond an actual hazard event. Quality, reliable, sustainable, and resilient institutional, social, and physical infrastructure is foundational to a country's ability to develop the right policies and programs geared towards ensuring a well-functioning society for its citizens. Government or non-government organizations play essential roles in assessing the adequacy of existing infrastructure; anticipating, implementing and operating new ones; and decommissioning of infrastructure systems that have outlived their usefulness.

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<sup>39</sup> UN Institute for Environment and Human Security (UNU-EHS) and Bündnis Entwicklung Hilft

Functional and resilient infrastructure has the most significant potential to reduce vulnerability. There are three kinds of infrastructures: institutional Infrastructure, social infrastructure, and physical infrastructure.

### **Institutional infrastructures**

Institutional infrastructure is the government itself. It comprises teams of people or decision-makers with a clear mandate. Such teams work behind the scenes to set the rules or terms involved in the creation and governance of both public and private institutions and set the parameters of acceptable behaviors while establishing the right values and motivation to make the rules work. As such, institutional infrastructure is more oriented towards administration and focuses on policy making and administrative oversight. Institutional Infrastructure or government exists purposely to create and execute the development agenda for society.

In this research, institutional Infrastructure refers to the policymaking and monitoring arms of government institutions and agencies, including notably those involved in the regulation and enforcement of laws. Institutional infrastructure includes individuals and institutions tasked with policymaking and oversight within all branches of the federal, state, and specifically the local government institutions, as well as those who regulate the distribution of public goods and services that enhance well-being amongst the population. Examples of institutional Infrastructure in Nigeria that are relevant to this research include the Ministry of Environment and Water Resources and the Nigerian Emergency Management Agency, which exercises jurisdiction over environmental protection and disaster management. They may also include non-governmental organizations such as the Red Cross.

Overall, institutional infrastructure is the think tank that produces the visions, ideas, and ideals from which social and physical infrastructures originate, function, and remain resilient.

Through policy formulation, implementation, and monitoring, institutional infrastructure creates new infrastructures and improves the quality and efficiency of existing physical and social infrastructure. As the building block of many societies, institutional Infrastructure may often be more significant than social and physical infrastructures in the way that it shapes the trajectory of development in a society. The ability to build resilience to the threats of flooding and effectively combat its excesses is dependent on the effectiveness of institutional infrastructures.

### **Social and Physical Infrastructures**

Social and physical infrastructures organize and perform the functions directed at producing and distributing public goods and services for the betterment of specific states, regions, or societies.

Social infrastructures are structures (services and facilities) that support the social needs of society, including those responsible for the provision of economic, cultural, and educational services, hospitals, women and youth development, and sports.<sup>40</sup> The essence of social infrastructure is to deliver specialized services that are necessary for maintaining the social standards of a population by ensuring or increasing societal welfare and supporting economic activity. Social infrastructures are foundational services and structures that support the quality of life of a nation, region, city, or community. Such services and structures are sustainable and resilient to disaster and include educational services, health service, safety, and freedom from fear related to crime, access to transportation, and other services that help to build communities.

The term 'physical infrastructure', on the other hand, refers to the physical components of the interrelated systems that provide commodities and services essential to enabling, sustaining, or

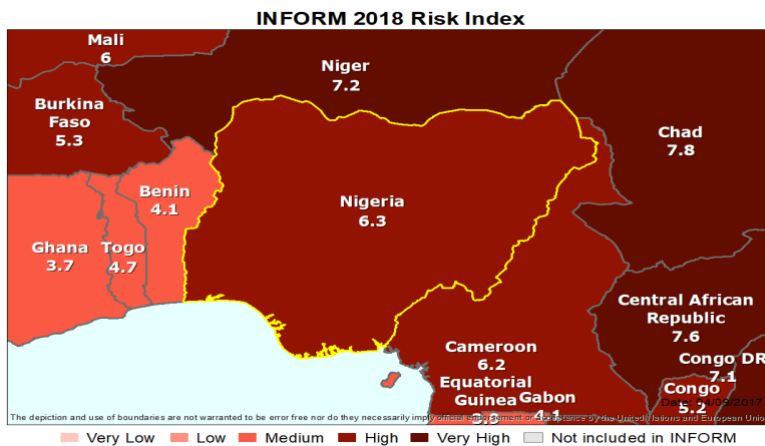
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<sup>40</sup> "What is social infrastructure? / ThinkingAloudUK / Thinking Aloud". [www.aberdeen-asset.fr](http://www.aberdeen-asset.fr). Retrieved 2018-04-25.

enhancing societal living conditions (Fulmer, 2009). It typically pertains to the technical structures that support a society, such as roads, water supply, sewers, national electrical grids, and telecommunications.

Several researchers have argued that Nigeria's lack of necessary infrastructure in facilitating sustainable development, and the weakness of existing institutional frameworks for flood disaster management, contributed to the 2012 flooding (Agbola, Ajayi, Taiwo, & Wahab, 2012; Agada & Nirupama, 2014). Nigeria has not kept up with its infrastructure needs, nor has it tackled its numerous infrastructure challenges. The World Risk Index<sup>41</sup> ranks 171 countries according to their exposure to disasters resulting from natural hazards such as floods, cyclones, or earthquakes. The Index for Risk Management (INFORM) Global Risk Index (2019)<sup>42</sup> identifies Nigeria as the 8th to 12 countries with the highest overall risk index.

*Figure 34 Twelve countries with the highest overall risk of natural hazards*



Source: The INFORM Global Risk Index<sup>43</sup>

<sup>41</sup> calculated by the University of Stuttgart

<sup>42</sup> The INFORM Global Risk Index, identifies countries at risk of humanitarian crises and disasters with the potential to overwhelm national response capacity.

<sup>43</sup> INFORM is a collaboration of the Inter-Agency Standing Committee Reference Group on Risk, Early Warning and Preparedness and the European Commission. The European Commission Joint Research Center is the technical lead of INFORM.

As noted in the previous chapter, three demographic features of the research locations that contribute to the vulnerability of the communities include three critical infrastructures: early warning, road network, and education. Although all the deficit in any critical infrastructure contributes to the vulnerability to the risks of natural hazards, these three have the gravest consequences for development.

### **Breakdown of Institutional Infrastructure- A precursor to Natural Disaster**

Early warning is a disaster management strategy that was not utilized effectively in the flood disaster in 2012. Leadership at high levels of government is a critical step in the development of effective warning services. Leadership is essential because an effective warning system depends on a coordinated response from many different agencies, not just those solely responsible for managing disasters.

Before Nigerian independence in the 1960s, individuals and groups were responsible for protecting themselves against the threats of natural hazards and for responding to disaster events. There were no systematic institutional response procedures for tackling flooding events (Obeta, 2009: 4579; Ibitoye, 2007:42-48). The federal government's pioneering intervention agency emerged out of the First, Second, and Third National Development Plans of 1962-68, 1970-74, and 1975-80 respectively, through the establishment of the federal and state ministries of works. One of the functions of the Natural Disaster Departments in these ministries was to create public awareness on flooding and associated hazards and to develop sound response strategies to combat the flood menace. These agencies played essential roles in identifying and characterizing flood-prone areas in Nigeria. They designed and developed drainage channels (especially in urban areas) and diversion channels and dams, which stored surface runoff and helped to reduce flood damage potentials in various parts of Nigeria (Ibitoye, 2007; Kolawole, Olayemi & Ajayi,

2011). In 1988, the Federal Environmental Protection Agency (FEPA) was established as a unit in the Federal Ministry of Works and Housing to develop policies and programs to protect the country from the negative impacts of ecological disasters (Obeta, 2009). In 1999, the Federal Ministry of Environment was established to assess the flooding potentials of watersheds and to determine, design, develop, and authorize the development of appropriate flood mitigation measures in these watersheds. The ministry presented a technical report on "Ecological Disasters in Nigeria," which found that flooding had become an enduring problem in many parts of the country. It noted that in many communities, flooding was becoming more frequent, intense, and unpredictable. It concluded that flood incidents in Nigeria did not result from a single factor but that they resulted from a combination of factors. With this recognition, the Ministry of Environment emphasized the need for the continuous adoption of both structural and non-structural strategies to combat flood hazards. As floods continued to create challenges for both people and the environment, new institutions were added to assist in flood disaster management. They include:

- i. The National and State Emergency Management Agency (NEMA)
- ii. The National Commission for Refugees (NCFR)
- iii. The Federal Environment Protection Agency (FEPA) (established earlier in 1988)
- iv. The Nigerian Meteorological Agency (NIMET)

NEMA procures and distributes relief materials in the form of food items, non-food items, and bedding materials to those affected by natural hazards. It now also engages in sensitization and early warning exercises. The technical mitigation committee of FEPA undertakes flood impact assessment responsibilities and develops structural and non-structural measures in readiness for a response. NCFR prepares emergency shelters or finds suitable accommodations

for internally displaced persons. NIMET studies the pattern of precipitation nationwide and acquires, classifies, and preserves the meteorological data needed for flood prediction and forecasting. All these agencies were in operation at the beginning of the flooding. Although there was an immense investment in resources to ensure a different outcome of the disaster, there was not enough contributed from the different agencies to achieve a more desirable outcome. A source at the national NEMA office disclosed that a National Disaster Response Plan had been prepared and was waiting for an event like the 2012 flooding for about three years. However, officials did not activate the plan.

During the 2012 flood disaster, all the relevant agencies unanimously agreed that the flood was predicted well ahead of time. However, as results show in the research, only 2% of flood victims received early warnings. Apart from NIMET, which forecasted the flooding in a timely fashion, all the other agencies were unprepared. The research found no evidence that any of the agencies engaged in mitigation, preparedness, and recovery efforts, not even NEMA, the principal agency for disaster management in Nigeria. In the end, the Red Cross and OCHA stepped in to provide cash and materials to the flood victims and buried the dead.

In 2011, a year before the flooding, the Federal Ministry of Transport announced plans for the dredging of the Benue River as part of the Federal Government's policy to combat the threat of flooding and to ensure full navigation through the nation's inland waterways. Dredging could minimize the risks and impacts of perennial flooding in all the locations of this research. A contract was awarded to the tune of NGN34 billion (\$1 billion) but never executed. The victims of the flooding were still waiting for dredging when the flooding occurred. In 2017, the Benue State government was again looking for ways to dredge the River Benue and was soliciting federal government financial intervention to execute the project, estimated at NGN308 billion

about \$10 billion (Fatunji, 2017). The research found that the government did not need to source the project out to contractors because Nigeria has an agency responsible for dredging the Nigerian waterways: The National Inland Waterways Authority (NIWA) was established with the primary responsibility to improve and develop Nigeria's inland waterways for navigation. One of its primary functions is to "undertake capital and maintenance dredging."<sup>44</sup> NIWA had the mechanical dredgers, and the workforce to undertake the dredging. Respondents alleged that the Nigerian government, however, preferred to give money to private contractors to dredge the river while NIWA's dredgers lay idle elsewhere (Olawoyin, 2017).

Even as the apex public sector institution for emergency management in Nigeria, inefficiency, bureaucracy, and corruption handicapped NEMA's actions throughout the flood disaster (Olorunfemi & Raheem, 2002). At the height of the 2012 floods, the National Emergency Management Agency (NEMA, 2012) estimated that 7.7 million people had been affected across the country, 2.1million of whom had registered as Internally Displaced Persons (IDPs) for assistance. Although the National Commission for Refugees (NCFR), as noted in the previous section, was created to prepare emergency shelters or find suitable accommodations for internally displaced persons, it was absent during the flood crisis. NEMA, as the arm of the federal government designated with the coordination of emergency relief operations and assistance for the rehabilitation of victims, divided the country into six disaster management zones with designated operational offices for coordination. NEMA converted school buildings to emergency shelters for IDPs, which disrupted education for both local communities and displaced children. At the Wurukum Camp, one classroom of 4 x 5-meter space accommodated five expectant mothers. Some classrooms held up to 25 children (RNW, 2012). NEMA's role in

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<sup>44</sup> <https://niwa.gov.ng/about-us/>



all of these was sporadic and disorganized. NEMA ended its assistance to IDPs immediately after the emergency phase, leaving thousands without accommodation and access to basic necessities. While some efforts were made by humanitarian and faith-based organizations and other non-governmental agencies to address some of the needs of IDPs, the access that the IDPs had to healthcare services, education, employment, and economic activities were highly limited. One senior NEMA official complained about the overstressing of its resources and stated that it was only able to support IDPs during the emergency and not in the resettlement phase. However, at the time of the flooding in 2012, NEMA was one of the best-funded agencies in Nigeria. Since the 2012 flood event, there have been other major flood disasters (2015, 2017), which means that the situation remains largely unchanged.

As noted in Chapter 6, education plays a significant role in minimizing the exposure of individuals to the threats of natural hazards. However, critiques point out that since independence, the education institution in Nigeria has consistently failed to meet critical goals towards enhanced learning and that the quality of education has continued to decline, especially in the rural areas. Theories of development recognize education as critical Infrastructure and an essential vehicle for development. Education is a priority sector in any society that wishes to build, enhance, and reshape human potentials for desired development. It is a significant force for economic, intellectual, social, and cultural empowerment, and the role of government in providing quality education is crucial. Nigeria's teeming young generation needs skills, aptitude, and relevant knowledge to survive in this continually technologically advancing world. However, Nigeria is facing a crisis in its educational sector, which is creating a massive impediment to its development. Currently, Nigeria has the largest population of out-of-school learning youth in the world. The National Planning Commission 2014 Final Report on Nigeria's

National Integrated Infrastructure Masterplan found that massive infrastructural decay and inadequate facilities have impeded the delivery of quality education. It points to dilapidated school infrastructure, including classroom buildings, laboratories, school libraries, workshops, sporting, and recreational facilities, roads, water, electricity, toilet facilities, staff, and student accommodation.<sup>45</sup> While education in Nigeria includes the primary, secondary, and tertiary levels, the primary level is the most important because it represents the very foundation upon which all the other levels of education are built. The secondary and tertiary levels are impossible without a primary or basic level.

The educational infrastructure in Nigeria is also failing. The policy on education in Nigeria, at best, is described as inconsistent and shaky. The only time that the elite or politicians were committed to reforming the educational system in Nigeria was during the colonial administration. In 1957, the nationalists, for example, agitated for and succeeded in reducing the number of years of primary and secondary schooling. The struggle for educational reform is tied to the agitation for independence. Since independence, the situation of education has progressively deteriorated. Today, it fair to say that education in Nigeria is in bad shape. For many Nigerians, this is mildly stating the obvious.

As far back as 1986, Ityavyar (1986) wrote about the deepening crisis in Nigerian education. At the time, he noted that the class structure created by colonial capitalism had made access to social, economic, and political opportunities very uneven. Although post-colonial education in Nigeria was opened to all, it was more to the bourgeois and petty bourgeois than to the indigent population. Even today, education in Nigeria remains mostly elitist, and educational

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<sup>45</sup> <http://www.infrastructureppp.org/wp-content/uploads/2017/02/NIIMP-Report-.pdf>

opportunities are still more accessible to politicians and government cronies. This imbalance in educational opportunities, in part, accounts for the widening gap between the rich and poor in Nigeria. Right at the onset, the bourgeoisie who took over after colonial rule failed to alter the education structure and to invest in its transformation. Social and regional imbalances that originated in the colonial period continue to mark education in Nigeria. For example, northern Nigeria was, and still is, educationally more backward than the southern part of Nigeria.

The growing need for formal education and increasing wealth from oil led to a new national policy to redress illiteracy and increase access to education. It is important to note that it was the military rule and not the democratic government of early independent Nigeria that helped to produce this unified national policy on education, first published in 1977.

The policy emerged out of a late outcome of a national curriculum conference held in 1969 (Yusuf & Yusuf, 2009:266). However, there was more emphasis on the framework of the policy than its substance. The substance of the policy included significant reforms such as the diversification of secondary level curriculum and continuous assessment. This policy, which led to the creation of the free Universal Primary Education (UPE), was the first significant attempt to respond to the education crisis in Nigeria (Ityavyar,1986:166). Free UPE was introduced as a new national policy on education in 1976 to make primary education readily available to all Nigerians. The philosophy behind the scheme was that a state-financed education was most desirable as it accords equal access to primary education to every Nigerian and enables the state to tailor education to national development effectively. If individuals become fully responsible for financing their education, the poorer classes will be at a disadvantage, which will have implications for Nigeria's socio-political economy.

The scheme was immediately met with challenges when the government went all out to implement it without adequate planning. For example, while the launch of the scheme occurred in 1976, the policy was enacted in 1977, one year later. The scientific or rational procedures to ensure the efficiency and effectiveness of the program were lacking. There was no proper needs assessment, and there was inadequate statistical data. Together these oversights created challenges of inadequate classroom spaces, teachers, and equipment (Akpa,1988). Barely a year into the implementation of the UPE, in 1977, according to Taiwo (1980:174), the number of children expected in primary education rose from 2.3 million to 3 million, and instead of the 500 million Naira earmarked initially for the project, the Federal Government spent a little over 1 billion Naira on UPE in just one year. The program triggered an exponential rise in pupil population from 8.7million in 1976/77 to 12.5million in 1979/80 and reached 15million in 1982.<sup>46</sup> To make matters worse, the Federal Government took over all voluntary and mission schools in addition to assuming full financial responsibility for running the free UPE scheme throughout the country.

The enormous responsibility the Federal Government of Nigeria took concerning the UPE program was not sustainable because it was not well planned. The financial pressure became so high that the government began to devise ways to distribute the burden. Additionally, the oil gluts were occurring and leading to economic stagnation. As a face-saving measure, in 1979, the blueprint on Educational Policy recommended that the federal, state and local governments share responsibility for primary education. The administration placed Primary education under the joint control of States and Local Governments in the 1979 Constitution, giving Local Governments direct control over primary schools. Throughout free UPE, there was contention

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<sup>46</sup> <http://www.gamji.com/article6000/NEWS7831.htm>

between local governments, states, and the federal government on how to split the cost of education between the three tiers (Ityavyar, 1986:169). The federal government took responsibility for making grants available to the state for the salaries of primary school teachers. The state governments bore capital costs such as buildings, furniture, fittings, books, diaries, registers, allowances, and other entitlements, including pensions. Local governments paid the salaries of non-academic staff and provided first aid and staff quarters. State governments that had responsibility for primary and secondary education found they could not finance free UPE anymore. The state and local governments argued that the responsibility bestowed on them was more than they could handle.

The degree of commitment by each level of government to the free UPE program steadily dwindled, and by 1979, some states in the federation started reversing the policy by returning voluntary and mission schools to their former owners. States and Local Governments began to charge fees, and some states reintroduced some costs of primary education. Many primary schools were merged, and others closed. The UPE program was now neither free nor universal.

The government blamed the oil guts and economic recession for the failure of the UPE. However, at the same time, Nigeria spent approximately \$1billion in hosting the World Black and African Festival of Arts and Culture- FESTAC- in Lagos and Kaduna, in 1977.

In 1999, a new government, dissatisfied with the result of the UPE, renamed and relaunched the program as Universal Basic Education (UBE).<sup>47</sup> The UBE was enacted and commissioned in 2004. It had no marked difference from the free UPE. The UBE remains in operation and is the policy structure for primary education in Nigeria. Not surprisingly, it inherited the same

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<sup>47</sup> Basic education was equated with six years of primary schooling in the past. Currently, basic education is extended to include the three years of Junior Secondary School. Universal Basic Education (UBE) includes formal education up to age 14 or 15, as well as adult, Nomadic, and non-formal education, including education of the marginalized groups within the Nigerian society (Opoh, 2015:2).

problems that led to the abandonment of the UPE. Presently, it is saddled by gross mismanagement of resources, insufficiency of funds, inadequate teaching and learning facilities, and corruption. Primary schools, particularly those in rural areas, under the auspices of the UBE, lack physical Infrastructure, including classrooms, laboratories, libraries, computer centers, potable water, electricity, toilets and furniture (Okoroma, 2006:251). Teachers are a decisive element of any instructional setting and have a critical role to play in the successful implementation of the UBE program. Several studies (Opoh, Unimna & Ogbiji, 2014:4) show that teachers in Nigeria are poorly motivated. Unqualified and inexperienced teachers direct large classes with an outrageous student to teacher ratio (Isangedighi, 2007; Opoh, Unimna & Ogbiji, 2014). Between 1970 and 2010, the average student/teacher ratio for Nigeria was 37.63 students per teacher. There was a minimum of 32.23 students per teacher in 1978 and a maximum of 46.09 students per teacher in 2007. The latest value from 2010 is 37.55 students per teacher. The world average in 2010, based on 137 countries, was 25.29 students per teacher.<sup>48</sup>

Oversight or inspection is indispensable to the acquisition of quality education. No educational program will function effectively without a quality inspectorate service. The Inspectorate Services, the quality control watchdog in the education sector, is sidelined; therefore, oversight remains a problem.

Although the government blamed the economic recession for the fate of UPE in 1979, there was apparent conflicting class interests, lack of commitment, and corruption that continued to influence the investment in education. In 2010, Nigeria invested 6.4% of its GDP in education, and 7.5% in 2011, 8.4% in 2012, 8.7% in 2013 and 10.69% in 2014 respectively (Opo, 2015:4). Ladan (2012) noted that the low level of financial allocation to the sector, which is below

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<sup>48</sup> [https://www.theglobaleconomy.com/Nigeria/Student\\_teacher\\_ratio\\_primary\\_school/](https://www.theglobaleconomy.com/Nigeria/Student_teacher_ratio_primary_school/)

UNESCO's threshold of 26% of the total budget, has an adverse influence on the implementation of educational policies in the country, especially the Universal Basic Education. In 2017, the Muhammadu Buhari administration earmarked the sum of N92 billion for the UBE scheme. During fieldwork in 2017, there was no primary school in Ocholonya, one of the research locations, and the community was putting together a three-room classroom.

Okoroma (2006:243) blames the crises in the educational system on the lack of political will, lack of continuity of programs, and corruption. There is a discernible gap between the ruling class in Nigeria and the broader population. There is a general lack of concern for issues that affect the larger society. For example, the politicians and government cronies who run the country do not need publicly funded primary schools. The schools are of such low standards they would not even consider enrolling their children there. They, therefore, have no interest or commitment to ensure funding of primary education. These wealthy individuals can buy far better education for their children at private schools than offered in public schools. A recent review of studies in some African and South Asian countries (Ghana, India, Kenya, Nepal, Nigeria, and Pakistan) found that students who attend private schools are more likely to achieve better learning outcomes than students in public schools (Olawale, 2016). The gap between education for the rich and the poor in Nigeria has never been this prominent. The lack of access to quality primary education widens the economic gap, which is growing every day. According to OXFAM (2017), the scale of economic inequality in Nigeria has reached extreme levels. This inequality makes the current state of education a considerable impediment to development.

Education in Nigeria requires a massive overhaul. Nigeria has not yet implemented a viable education program for the country since its independence. The same issues which led to the early demise of the free UPE, affect the UBE today. 1975-1983 was a period of the boom with money

flowing in from petroleum. The period witnessed the launching of the most extensive educational program in Nigeria with the potential to benefit the masses and enhance development. Instead, it was a period of unprecedented financial imprudence, irrational planning, large scale corruption that culminated in a steep decline of educational development prospects. In the absence of planning, haphazard implementation, fraud, and corruption, the free UPE balked. This failure set the precedence for the gross inefficiency in education in Nigeria today. The competence of education to improve socioeconomic status speaks to the urgency of refocusing and reforming education to increase the empowerment of individuals and their ability to self-protect against the threats of natural hazards.

The failure of road network infrastructure contributes to vulnerability, particularly of those in the research location. Nigeria has a national road network of about 200,000km. Federal roads make up 18% (about 35,000km), State roads 15% (about 17,000km), and Local Government roads 67% (about 150,000km), with most Local Government roads being unpaved. The total length of paved roads is estimated at a little over 60,000 kilometers, even though 95% of passenger and freight traffic travels by road. Nigeria has a road density of 21 km per 100 km, which puts it clearly behind international, and BRICS benchmarks (NIIMP, 2015:38).<sup>49</sup> In Nigeria, 95% of both passenger and freight movements are by road because of the inadequacy of other forms of transportation. Although the federal roads account for only about 18% of the entire national road network, they accommodate more than 80% of national vehicular and freight traffic, thus underscoring their crucial importance to the country's economy.

During the oil boom years, the government invested substantially in federal roads, creating a network that was once considered the best in the African continent. However, decades of neglect

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<sup>49</sup> BRICS is an acronym for the combined economies of Brazil, Russia, India, China, and South Africa. Economists at Goldman Sachs originally coined the term BRIC (without South Africa) in 2003.



due to corruption and lack of institutional capacity have caused the network's decay. As noted in Chapter 6, research revealed that there are consistent and significant associations between economic development, in terms of per capita gross national product (GNP), and road infrastructure, in terms of per capita length of the paved road network. The Federal roads are exposed to severe pressure due to increased vehicular traffic and freight, especially because other forms of transportation to convey goods are lacking. Most of the roads are in very poor condition. Bad roads are a significant problem in Nigeria, and Nigerians continuously complain about their roads, and access to them. Travelling through major interstate highways, Nigerians endure bumpy rides along routes marked by twists, bends, flooding, and potholes. On a universal pothole index, Nigeria's arteries would rate among the worst maintained (Rotberg, 2007:27). In 2013, a survey conducted by NOI Polls on the safety of Nigerian roads found that 82% of Nigerians believe that bad roads are the leading causes of road deaths and injuries.<sup>50</sup>

A 2011 World Bank report finds that Nigeria must increase its spending to \$14.2 billion yearly over the next ten years, to reach a total of \$142 billion- \$10.5 billion per annum needed for federal infrastructure and \$3.7 billion for state/municipal-level assets.<sup>51</sup> As already mentioned, transport infrastructure is critical to growing nearly all other sectors of the economy. Therefore, a nation's viability is dependent on its transport sector. Nigeria's current transport infrastructure fails to align with the country's aspiration to become one of the world's largest economies. Nigeria needs to increase maintenance and capacity expansions to improve the present state of Nigeria's Infrastructure According to the compendium report on road infrastructure; there is a need to enhance road infrastructure delivery to support the expanding

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<sup>50</sup> *Ibid*

<sup>51</sup> <http://documents.worldbank.org/curated/en/941931468333927745/pdf/421340PAD0P0901nly10IDAR20081004911.pdf>

population. Adequate road infrastructure is central to Nigeria's economic growth; it is at the core of public welfare<sup>52</sup> and good governance. Focusing on transforming the road network infrastructure would improve safety, convenience, travel time, and transportation costs in Nigeria, as well as reduce carbon/particulate emissions.

Overall, and in contrast to international benchmarks of 70% of GDP, Nigeria's core infrastructure stock is estimated at only 20-25% of GDP – the equivalent of less than USD 100 billion in 2012. The deficit leaves Nigeria with a massive infrastructure gap. If "non-core infrastructure" (social housing, security, mining, agriculture) is included, the gap is more extensive. Nigeria's Infrastructure has long been a bottleneck for economic growth. It is underdeveloped compared to that of other fast-growing emerging countries. Road density in Nigeria, for example, is only about a fifth of that obtainable in India. The entire road networks in Nigeria, which is currently estimated to be 200,000km, must be improved to bring them up to par with road infrastructure development in other thriving economies such as the USA, China, Brazil, Turkey, India, and South Africa. Compared to Brazil and South Africa, the Nigerian population's access to sanitation and mobile telecommunications fall short. Nigeria has five hospital beds per thousand people ratios. This ratio is lower than India's (at nine) and much lower than South Africa's 28 beds per thousand people (NIIMP, 2015:10).<sup>53</sup> For Nigeria to reach its development objectives for the 21st century, infrastructure development must take precedence over all other aspirations.

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<sup>52</sup> <http://www.pisonhousing.com/RESOURCES/investorsmanual.pdf>

<sup>53</sup> <http://www.pisonhousing.com/RESOURCES/investorsmanual.pdf>

## **Remoteness: Isolation and marginalization of rural communities**

The existence of local government is to bring governance and development to the grassroots. The local government is a vehicle for the provision of infrastructures, which are necessary prerequisites for sustained development, including roads, health facilities, education, electricity, and rural transportation.

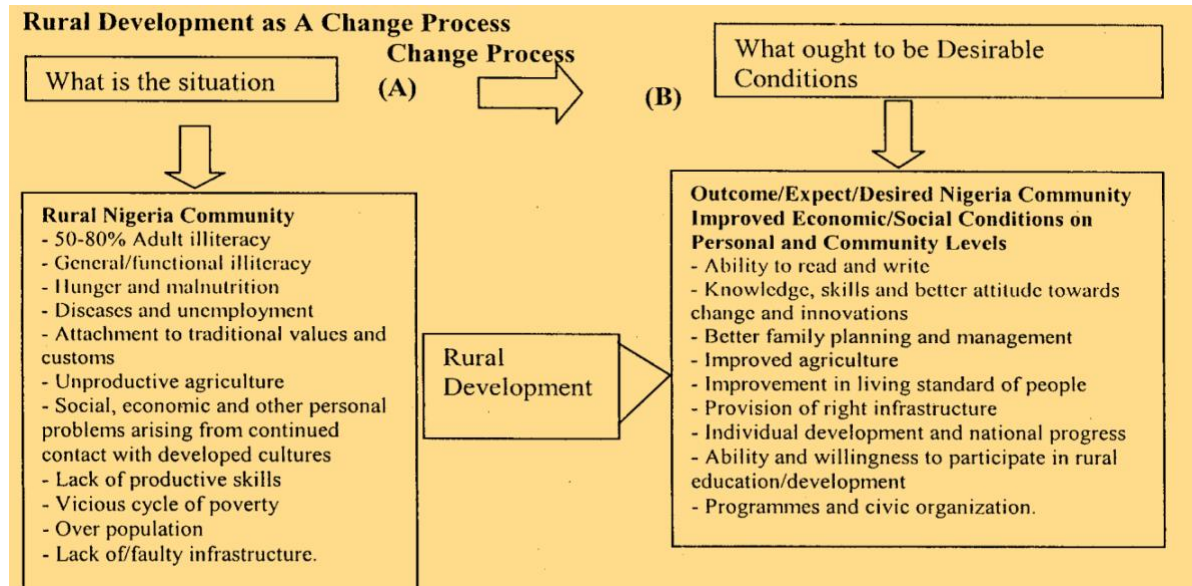
The word 'rural,' according to Enyi (2014:106), implies a place with agricultural orientation; the houses are farmhouses, barns, sheds, and other structures of similar purposes. This quaint idea of the rural area, which this description conjures, is mostly applicable to developed societies. According to Olisa et al. (1992:65), the main features of rural areas include depression, degradation, and deprivation. There is poverty everywhere, and the necessary infrastructure is often lacking or too little for any meaningful development. Similarly, Adenipekun (2013:256) finds that the condition of rural areas is abysmal and has constituted a good source of poverty. Some of the conditions he notes include a lack of essential services, such as clean water, education, health care, and a lack of assets, such as land, tools, and credit. These views of rural areas are a more accurate reflection of rural areas in Nigeria. In developed countries, rural populations are a vital part or the backbone of the economy. In developing countries such as Nigeria, they are isolated and marginalized despite the critical role they play in agricultural production- providing food for much of the country (Njoh, 2012; Thomas, 2013; Usman, 2014).

Generally, Nigeria is described as a rural society because more than half of its total population resides in the rural areas (Olowu, 1986). Rural areas fall within the jurisdiction of the local government institution. According to the Federal Government Guidelines (1976) in the 1976 Local Government Reforms, the government is:

Government at local level exercised through representative council established by law to exercise specific powers within defined areas. These powers shall give the council

substantial control over local affairs as well as the staff and institutional and financial powers to initiate and direct the provision of services and to determine and implement project so as to complement the activities of the estate and federal governments in their areas, and to ensure the active participation of the people and their traditional institutions, so that local response to local needs and conditions are maximized.

*Table 12 Diagrammatic representation of the vision of rural development as a change process in Nigeria*



Source: adapted from Uwakah C.C. lecture on Agric. Extension. Education UNN 1985 (Unpublished)

Across time, distinctions between the ideals that established the local government and its operational achievements have emerged. According to Isa (2016:106), these distinctions became more glaring when successive civilian regimes made away with the local government structures for political reasons and in their place established caretaker committees. Isa (2016:106) further notes that the local government has established a dubious reputation as a place where nothing ever gets done rightly or morally or only gets done when money changes hands. As a result, it has become the level of government with the highest cost for contracts. Projects often are overpriced by more than 300% above costs elsewhere (Isa, 2016:106).

The deplorable conditions of rural areas in Nigeria today represent the failure of rural development agendas. The concept of rural development in Nigeria dates back to the colonial era

when in 1946, the colonial administration introduced the Ten-year Plan for Development and welfare for Nigeria, presented in the Sectional Paper No. 24 of 1945. As most colonial policies in Nigeria, it was designed to increase the volume of export crops for British markets while little attention was given to the lives of those producing the materials. While the 1955 – 1960 Development Plan also emphasized increased agricultural and industrial production to help increase income and improve the standard of living of the people, like the earlier plan, it lacked any specific plans directly targeted towards the benefits of rural people. Instead, the British colonial bourgeoisie in Nigeria succeeded in establishing a colonial economy as a framework for consolidating and maintaining underdevelopment. According to Nnoli (1977:139):

*The British colonial bourgeoisie in Nigeria succeeded in establishing a colonial economy as a framework for consolidating and maintaining underdevelopment. The framework involved the systematic appropriation of economic surplus for Britain's development, discouragement of rural manufacturing, stagnation of agriculture, and the maintenance of mass illiteracy and sustained technological backwardness.*

In Chapter 6, poverty/marginalization of rural communities was one considered as one of the factors contributing to social vulnerability. Waldo R. Tobler's First Law of geography was used to show how spatial distancing engenders administrative distancing and creates distance decay. Remoteness is a locational analysis of how development between communities on the outskirts and others that are the centers of activities differs. Remoteness helps to explain the disparity in development between rural and urban areas in Nigeria.

Although the local government areas are critical to service delivery in the local communities and well-funded, there is little oversight from the federal government to ensure the execution of local policies/programs. According to Khemani (2001:1),<sup>54</sup> the states and local government areas in Nigeria receive a substantial amount of resources. Their total revenues amount on average to

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<sup>54</sup> <http://www1.worldbank.org/publicsector/decentralization/March2003Seminar/FiscalFedReport.pdf>

over 5% of the GDP between 1990 and 1999, and over 10% of GDP after the oil price increase in 1999. The Gross Statutory Allocation for the 23 Local Government Areas in Benue State for January 2019 was N3,828,169,617.81 (\$10,590,079.912).<sup>55</sup> However, the allocation hardly goes into development projects. There is lower political accountability in the local government areas for multiple reasons. These include the presence of local elites who intercept all resources and deprive the local government of these resources, as well as the corrupt practices carried out by local government officials, particularly concerning the diversion of public funds. Corrupt local government public officials and their unscrupulous allies who pose as supply contractors have devised the so-called zero-supply system. This means that when a contract is awarded, it is never executed. The contractor gets the money, gives the local government representative the agreed percentage cut, and that is the end of the contract (2016:106).

Apart from the allocation of resources, the federal government is hardly involved in the running of the Local Government Areas. The apparent detachment from the affairs of the local government areas means little oversight and requirement for accountability. The consequence of little oversight and accountability makes it crucial to highlight remoteness as contributing to social vulnerability to the threat of flooding. These circumstances create gaps in administration and governance, with severe consequences for infrastructural development and service delivery. Also, the relative absence of media scrutiny reinforces the lack of checks and balances from the federal government (Khemani, 2001:16).

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<sup>55</sup> <https://www.proshareng.com/admin/upload/report/12030-FederationAccountAllocationCommitteeFAACJAN2019Disbursement-proshare.pdf>

Additionally, Enyi (2014, 110-111) observes that due to rampant corruption and gross mismanagement at all levels of governments, the various aids and assistance received by Nigeria from international organizations and institutions like UNO, USAID, DFID, WHO, and others have not been utilized to the benefit of rural development. Enyi (2014, 110-111) finds that there is severe neglect of rural areas in Nigeria. In various spheres of human endeavor, rural communities are deprived, exploited, and lacking the basic needs of life. Rural development in Nigeria has remained, at best, a mirage.

Anele (2012), writing about the state of rural areas in Nigeria, notes that virtually all federal government initiatives to improve rural dwellers' lives failed due to poor planning, corruption, and avarice by government officials and their collaborators. He noted that "the level of the federal government's presence in the rural areas is abysmally low." As a result, rural development programs launched with fanfare by different administrations in the country and other vital issues affecting rural areas nationwide have continued to be sidestepped, keeping rural communities underdeveloped all these years. According to Oravee (2015: 68), some initiatives by both the federal and state governments to facilitate the economic development of rural areas in Benue State and which all failed outright include:

- The Peoples Bank of Nigeria (PBN): The PBN was established by Decree No. 22 in 1990. It had the responsibility of extending credit to underprivileged Nigerians who could not ordinarily access such loans from the conventional banking system. It later merged with the Nigerian Agriculture and Cooperative Bank (NACB) to form the Nigerian Agricultural, Cooperative and Rural Development Bank (NACRDB). Although this body was to engage in group lending to cottage industry promoters, agricultural producers, PBN failed to reach its mandate. It faced a high degree of problematic loan situations. Its

external audit report showed a considerable loss provision of over 80% on its loan portfolio at its closure. Unwise investment decisions trapped some of its funds in distressed and liquidation banks.

- The Family Economic Advancement Program (FEAP): FEAP was established to provide credit for agricultural production and processing, as well as cottage and small-scale industries through cooperative societies. It also had the responsibility to establish enterprises and pilot projects at the village level to provide employment. Before it shut down in 2000, FEAP financed 20,382 projects with a total credit of N3.33b (9,076,806.114) and trained about 2000 loan beneficiaries in cooperative laws, principles, and practice and necessary marketing skills. FEAP suffered neglect and was saddled with organizational problems stemming from non-supervision and the inadequate monitoring of loans and projects by participating banks. Other problems that contributed to the demise of FEAP include the provision of sub-standard equipment and delays in the fabrication of equipment, and weak loan recovery. Its assets and liabilities were handed over to the National Poverty Eradication Program (NAPEP) when it closed.
- The National Poverty Eradication Program: NAPEP is an offshoot of the defunct poverty alleviation program which was phased out in 2001 as a result of structural inefficiency. NAPEP consisted of four schemes, namely: Youth Empowerment Scheme (YES), Rural Infrastructural Development Scheme (RIDS), Social Welfare Services Scheme (SOWESS), and National Resources Development and Conservation Scheme (NRDCS).

These initiatives, all intended to transform the lives of those in rural areas, failed.



Empirical evidence shows that several factors contributed to the dismal performance of local governments in ensuring sustainable organizational and economic development across the country (Amayah, 2000). They include:

- Diversion of government revenue by public officials
- Overpayment of salaries and allowances to staff
- Payment for jobs not executed
- Manipulation of contracts
- Deliberate irregularities in the management of accounting procedures
- Inflation of contract sums by public officials
- Payment to ghost workers

Local governments as essential institutions for rural development have been mostly ineffective, despite the substantial monthly statutory allocations to the local government areas. There is still a lack of commitment on the part of political operatives to work towards enhancing the development of their rural constituencies (Anikeze, 2012). Instead, the interests of the local government leadership primarily revolve around trivialities or at best around those schemes from which they derive immediate personal gains. This makes it challenging to channel adequate funds and other resources for rural development. In this light, Abdullahi and Ahmad (2018:1523) argue that local governments have failed to perform their constitutional role several decades after their creation despite the increased funding from the federation account. The precarious performance of local governments, according to them, is connected to all forms of mismanagement and corruption embedded in the system of local government in Nigeria.

Poor leadership, inadequate management capacities of both political leadership and career bureaucrats, political indifference, and, most importantly, the absence of an institutionalized culture of good governance and accountability led to the failure of these initiatives. The absence of efficient and effective, as well as responsive, systems of social service delivery in local government seems to defy solution. Due to long years of decaying service delivery and corrupt

practices, citizens have become cynical and apathetic towards the local government. The culture of administrative distancing supports the claim that vulnerability to natural hazards is not a function of lack of resources but rather a consequence of a lack of access to resources. The poor performance by local governments is not unconnected to broader processes in Nigeria's governance structure. 'Remoteness' as a factor of Institutional Neglect, therefore, embodies the failure of institutional infrastructure. The administrative inefficiency of the local government institutions led to the general stagnation in the development process of rural people and their environment (Halidu, 2012; Anikeze, 2012). The next section discusses mass poverty as a factor of Institutional Neglect. It illustrates how the neglect to execute policies, programs effectively, and initiatives that give people economic freedom elevates Nigeria's poverty profile.

### **Mass Poverty as Institutional Neglect and as a Prelude to Disaster**

As noted in the previous chapter, poverty creates vulnerability to the threats of natural hazards. This section focuses on how institutional processes contribute to the production of poverty in Nigeria. There are two contending definitional perspectives of poverty. The first defines poverty in terms of income, which can take several different forms. One form of income definition of poverty is the percentage of people living on less than USD 1.25 per person per day (usually in terms of purchasing power parity - PPP). The second calculates poverty using the lowest income in a population. Poverty, as used in this analysis, consists of both forms in addition to a third (more general) consideration, namely, the poverty of opportunities and hardships in meeting basic needs. The poverty of opportunities and hardships relate to the earning capacity that can help the individual build some level of self-protection against the

threats of natural hazards. Other metrics for poverty measurement, such as occupation and employment, are also applicable to this analysis.

Poverty is not an inherent human characteristic. It is the failure of the institutional systems to distribute public goods equitably. Poverty is induced and maintained by dysfunctions within institutional processes. Poverty and disaster outcomes are inextricably linked. Poverty increases the people's vulnerability to disasters and the effects of disaster on their wellbeing (Lal, Singh & Holland, 2009). Disasters, on the other hand, reduces human wellbeing and increases poverty and thereby vulnerability. Various factors influence the outcomes of the two-way relationship between poverty and disasters. In this research, the empirical relationship between poverty and disaster, as alluded to earlier, is mediated by a complex web of socioeconomic and institutional forces engendered by Institutional Neglect.

A recent think tank report which examined the relationship between disasters and poverty presented three key findings:

- By 2030, up to 325 million impoverished people, the majority in South Asia and sub-Saharan Africa, will be living in the world's 49 most hazard-prone countries
- A list of the 11 countries most at risk of disaster-induced poverty includes Bangladesh, Madagascar, Nepal, Nigeria, Pakistan, South Sudan, Sudan, the Democratic Republic of the Congo, Ethiopia, Kenya, and Uganda.
- Disaster risk management should be recognized as a critical element of poverty reduction efforts. It focuses on protecting livelihoods and saving lives. It is crucial to identify and address areas where there is a concentration of the poor, and disaster risks are most enhanced (Shepherd et al., 2013).

The findings have critical consequences for Nigeria. There are 86.9 million Nigerians now living in extreme poverty.<sup>56</sup> This number represents nearly 50% of its estimated 190 million population. According to projections from the World Poverty Clock, Nigeria has already surpassed India as the country with the most significant number of the extreme poor.<sup>57</sup> In early 2018 India had a population seven times larger than Nigeria. However, India had 73 million as opposed to Nigeria's 86.9 million living in extreme poverty. What is more, extreme poverty in Nigeria is growing by six people every minute, while poverty in India continues to fall (Kharas, Hamel & Hofer, 2018).<sup>58</sup> Nigeria is at the top of the 10 African countries with extreme poverty. Nigeria faces a major population boom and is on track to become the world's third-largest country by 2050. A larger population means that poverty will likely worsen in the absence of measures to address it. According to the World Poverty Clock data, 13 of the 15 countries across the world where poverty is rising are currently in Africa, with Nigeria topping the list. Table 8.1 below shows where extreme poverty is rising,

*Table 13 List of 10 Sustainability Development Goals (SDG) countries in Africa living in extreme poverty*

Country	Percentage of the population in extreme poverty	SDG Status
Nigeria	46.7	Poverty rising
The Democratic Republic of Congo	77	Poverty rising
Ethiopia	23.4	Off-track
Tanzania	35	Off-track
Mozambique	61.8	Off-track
Kenya	30	Off-track
Uganda	34.2	Off-track
South Africa	24,6	Off-track
South Sudan	93	Poverty rising

<sup>56</sup> <https://worldpoverty.io/>

<sup>57</sup> New projections on country economic growth from the International Monetary Fund's World Economic Outlook forms the basic building blocks for poverty trajectories from the World Poverty Clock.

<sup>58</sup> Kharas, H., Hamel, K., & Hofer, M. (2018). The start of a new poverty narrative. [https://www.brookings.edu/blog/future-development/2018/06/19/the-start-of-a-new-poverty-narrative/?utm\\_medium=social&utm\\_source=twitter&utm\\_campaign=global](https://www.brookings.edu/blog/future-development/2018/06/19/the-start-of-a-new-poverty-narrative/?utm_medium=social&utm_source=twitter&utm_campaign=global)

Zambia	57,2	Poverty rising
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Source: Yomi Kassem (2018)<sup>59</sup>

In addition to the challenges at the national level, Benue State is one of the least urbanized states in Nigeria with a large rural agricultural population. The State is one of the poorest states in the country, with more people living in extreme poverty than the average for Nigeria. The population of Benue State is overwhelmingly agrarian. Over 75% of the population lives in rural areas. A federal government declaration now classifies about 52 settlements as towns. However, only about 23 of these settlements have developed to the status of anything more than big villages. The population of big villages ranges in the thousands. Makurdi, Gboko, and Otukpo stand out as the largest towns in the state. In a situation where there is already a struggle to meet the necessities of life, throwing a hazardous event like the 2012 flood was a perfect recipe for disaster.

To check the spread of rural poverty and its attendant consequences, the Benue State government employed various strategies for rural development. These are in addition to the many failed federal government initiatives; some addressed earlier in the chapter. One of these strategies was the creation of the Upper Benue Basin and the Lower Benue Basin Development Authorities in Makurdi. These agencies are two of 12 River Basin Development Authorities (RBDAs) spread across the country and promulgated by the Supreme Military Council decree 25 of 1976.

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<sup>59</sup> <https://qz.com/africa/1313380/nigerias-has-the-highest-rate-of-extreme-poverty-globally/>

The goal of the Lower Benue River Basin Rural Development Authority (LBRBRDA) was to raise the rural people's income by optimizing the potentials of land and water resources within the country by engaging such resources in a variety of ways ranging from irrigation to household use. LBRBRDA holds the following responsibilities:

- develop both surface and underground water resources for multi-purpose use;
- control erosions and floods, and to undertake watershed management;
- construct and maintain dams, dikes, polders, wells, boreholes, irrigation and drainage system;
- develop irrigation schemes to improve the production of crops and livestock and to engage in leasing irrigated land to farmers or recognized associations in local areas.

RBDAs were unable to realize these goals because of neglect, resource mismanagement, political interference, and the absence of good governance and public accountability (Akhakpe et al., 2012). The 2009 data from the budget office indicated that the RBDAs received over N40 billion (\$109,912,333.12), with N37 billion (\$101,668,908.14) marked for capital projects. There was no report on the execution of any of the projects. The report concluded that RBDAs only exist as avenues upon which billions of Naira were annually dumped, with little or no results. So, this initiative, like many others before it, suffered the same fate of neglect and abandonment.

In an assessment of LBRBRDA's performance, Ravee (2015) concludes that:

The LBRBRDA was the appropriate agency to provide infrastructural facilities to minimize the high incidences of poverty in its host communities. Corruption, bad governance, inadequate consultation with stakeholders, and a host of other factors constrain its effectiveness. Consequently, LBRBRDA, just like other poverty alleviation programs in Nigeria, has not succeeded in alleviating poverty in its host communities.

In its policy document in 1999, the Central Bank of Nigeria (CBN, 1999:12) grouped the causes of poverty in Nigeria into two categories: low economic growth and market imperfections. These are categories over which only the government has control. On the other hand, the World Bank (2002:34), however, reasoned that a better way to investigate the causes of poverty was to examine the dimensions highlighted by the impoverished themselves, including:

- Inadequate access to markets where the poor could sell their goods and services. This was a result of the absence of infrastructures such as road and communication networks to enhance the remote geographical location of rural people, making access to markets difficult.
- Inadequate access to education, health sanitation, and water services. Inadequate social service delivery makes it difficult for poor rural dwellers to live a full and active life and take full advantage of opportunities to build social and human capital.
- The destruction of natural resources endowments led to reduced productivity in agriculture, forestry, and fisheries. The depletion of natural resources often results from the desperate survival strategies of the poor, in addition to the inadequate and ineffective public policy concerning natural resources management.
- Inadequate access to assistance by victims of transitory poverty resulting from drought, floods, pests, and wars, often caused by a lack of well-conceived strategies and resources.
- Inadequate involvement of the poor in the design of development programs. Poor communities or beneficiaries are often not included in the discussion, preparation, design, and implementation of programs that affect them. These have real consequences for the more than 80% of Nigerians who live below the poverty line.

In 2004, Benue State set a broad environmental goal, in the Economic Empowerment and Development Strategy (BENSEEDS, 2004), to protect the Benue environment for socioeconomic development for present and future generations. Its specific policy objectives include:

- To secure a qualitative environment adequate for good health and wellbeing.
- To sustain, enhance, and restore ecological practices and ecosystems diversity.
- To minimize the environment/poverty relationship.

Under policy objective (1), the state proposed to:

- Provide by December 2005, an effective solid waste management scheme in Makurdi and other local government Areas.
- Sustain environmental sanitation exercise, and commence house to house sanitary inspection, by 31/12/2005 (BENSEEDS, 2004).

The various approaches and strategies to reduce and alleviate rural poverty presented earlier show that Nigeria lacks neither the resources nor the vision of a developed society whose citizenry is resilient to the threats of natural hazards. What is lacking is the leadership to ensure the achievement of set goals. The research found that in 2017, thirteen years after the enactment of the policy, poverty was widespread and endemic. Today, Benue State remains the poorest and most vulnerable state in the country.

### **Weak Governance**

Governance refers to the different ways governments, the private sector, and in general, all individuals and institutions in society organize themselves to manage their everyday affairs (UNISDR 2015). A discussion on weak governance immediately implies the absence of good



governance and brings up the modern 'good governance' agenda of the international financial institutions. While an in-depth analysis of the good governance agenda is not necessary, a short preamble will explain the use of the term here and its relevance to the overall research argument.

'Good governance' moved into the agenda of many international organizations at the end of the Cold War in the early 1990s when the United Nations and other multilateral agencies urged governments around the world to embrace higher standards of democratic representation, accountability, and transparency, urging governments to conform to standards of 'good governance.' The good governance reforms draw on a precise and partial reading of new institutional economics and political economy to create a way of understanding economic development. The premise of good governance is that political stability and economic development in developing countries can be achieved based on institutions of political representation, accountability, and market competition. However, as Gray and Khan (2010:1) note, a large part of the history of economic, political, and social transformations that developed societies went through to arrive at where they are today is not taken into consideration. Therefore, critics argue that the assumptions interpreted economic and political theory very selectively. Therefore, pertinent questions have since emerged concerning the validity of the good governance agenda, both from within the mainstream and heterodox economic approaches, despite the proliferation of quantitative studies and policy conditionality based on its conclusions.

While the good governance agenda continues to have far-reaching consequences for the target countries, the tenets which they espouse align with the goals supported by social justice movements for better governance. Civil struggles for social justice in Africa and elsewhere are often expressed in terms of demands for better governance. The agenda taps into the popular

aspirations of millions across the African continent, facing the burden of poor governance every day and want their leaders to be held accountable through genuinely democratic political systems. Therefore, good governance is perceived as 'conventional wisdom' in much of the development discourse and espoused by African leaders. It is also reflected in commitments in NEPAD and the AU, as well as being central to donor conditionality (Gray & Khan, 2010:2). Although the good governance agenda aligns with the goals supported by social justice movements, they are not informed by the same motives. While the good governance policy seeks accountability in governance, it does not consider how the goal is achieved and who suffers in the process. As opposed to the social movement version of good governance, the good governance agenda has no regard for social justice per se. The good governance agenda and the way they are supported can make achieving social goals even more difficult. However, the core tenets of good governance in themselves, without the strict economic restrictions, can transform the Nigerian body polity. It will serve Nigeria well as a purely political policy. To reject that will be akin to throwing the baby out with the bathwater. It is against this backdrop that the research employs good governance.

The good governance tenets or landmarks are accountability, transparency, effectiveness, and efficiency. It is also participatory, consensus-oriented, equitable, and inclusive and follows the rule of law. It ensures that corruption is minimized (like in the case of election malpractices). When operationalized, good governance promotes efficiency and expands the indicators of democracy: multiparty, freedom of speech and the press, the individual opportunity for prosperity, and improved wellbeing, thus contributing to the growth of the society. By ensuring effectiveness and efficiency, bureaucratic institutions can produce results and achieve goals

using the resources at their disposal to meet society's needs. The concept of efficiency in good governance also covers the sustainable use of natural resources and environmental protection.

Weak, poor, or good governance, as used here, highlight the institutional practices which hinder equitable service delivery. Ogundiya (2010:201) provides a definition that reflects how good governance is used in this research. He defines good governance as the fair and equitable allocation of resources to achieve the goals of the state for the promotion of the common good (Ogundiya, 2010:201). The challenges faced by the ordinary Nigerian today as has so far been enumerated, arise from weak governance. Despite its enormous resources and vast potentialities, Nigeria remains grossly undeveloped. The political and bureaucratic institutions have not lived up to the expectation of equitably distributing public resources, which brings development home to the general population. Weak governance is evident in corruption, rent-seeking, inappropriate planning, and neglect of infrastructure. All these factors contribute to Nigeria's underdevelopment. Consequently, Nigeria is besotted political instability, abject poverty, acute youth unemployment, heightened crime rate, poor health prospects, and widespread malnourishment. Most students of African politics have argued that governance is one of the major problems in Africa and that the problem of development in Nigeria is a problem of governance (Ogundiya, 2010:201).

In 2015, a major international report brought Nigeria's challenges of good governance into sharp focus. The report, titled "Escaping the fragility trap," was published in 2018 by the joint LSE (London School of Economics) and Oxford University Commission on State Fragility. The report was chaired by former British Prime Minister David Cameron and co-chaired by the former president of the African Development Bank, Donald Kaberuka. According to Fasan

(2018<sup>60</sup>) Nigeria exhibits all the features of a fragile state. The six symptoms of fragility, according to the report, include:

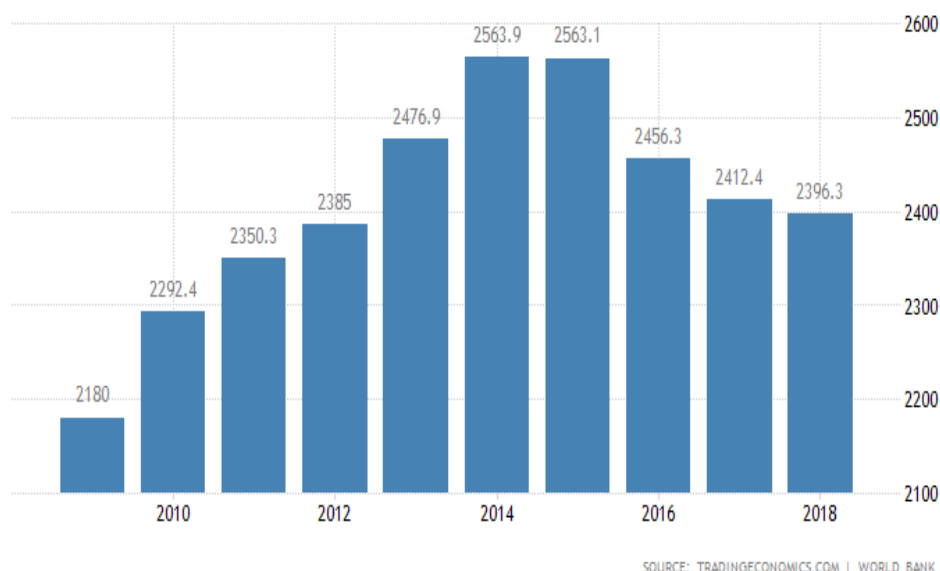
- A security threat from organized non-state violence
- The government lacks legitimacy in the eyes of many citizens
- The state has a weak capacity for essential functions
- The environment for private investment is unattractive
- The economy has little resilience to shocks
- Deep divisions in the society

On the other hand, three criteria measure the strength of a state. They include GDP per capita, the UNDP Human Development Index, Transparency International's Corruption Perception Index, and Freedom House's Freedom of the World Report. Again, Nigeria does not fare well in any of these categories. For example, Nigeria holds the 31st position regarding nominal GDP. Its national debt in 2017 was \$82,041b (21.79% debt-to-GDP ratio), and its public debt per capita was \$430 per inhabitant.

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<sup>60</sup> <https://blogs.lse.ac.uk/africaatlse/2018/06/13/nigeria-is-a-fragile-state-international-studies-prove-it/>

*Figure 35 GDP per capita for Nigeria 2010 - 2018*



Source: World Bank

No country has the designation of a fragile state. Looking objectively at the symptoms of a failed state, Nigeria, however, falls within the purview. Although Nigeria has a democratically elected government, it still exhibits other characteristics of a weak state and lacks legitimacy in the eyes of a large proportion of the population. In free-ranging conversations, especially in the rural areas, there was a palpable feeling of absolute disconnect of the people from the government - a disconnect fueled by the failure of institutional infrastructure. Many rural residents referred to the government as an entity in which they had neither participation nor stake- a government that looks out solely for its interest with total disregard for its citizens. No situation underscores weak governance more than the disenfranchisement of the people.

The inability of the government to rein in poverty and inequality reflects weakness in governance. As has been noted severally, it does not take an economic expert to see that most Nigerians are poor. General signs of poverty and economic stagnation which define Nigerians, especially the rural population, include a weak health system, poor education system, an

inadequate network of the transportation system, an unstable power supply, low purchasing power, unemployment, and low productivity, low consumption and low investment. Addressing the problem of economic inequality in Nigeria, an OXFAM 2017 report points out that although Nigeria is the largest economy in Africa with an expanding economy abundant in human capital and the economic potential to lift millions out of poverty, economic inequality in Nigeria has reached extreme levels. The report finds that poverty and inequality in Nigeria are not due to a lack of resources, but to the ill-use, misallocation, and misappropriation of resources. According to the report, at the root of poverty and inequality is a culture of corruption combined with a political elite that is out of touch with the daily struggles of average Nigerians (OXFAM, 2017). The report finds further that the combined wealth of Nigeria's five richest men - \$29.9 billion - could end extreme poverty at a national level, yet 5 million face hunger. Today, more than 112 million people are living in poverty in Nigeria, yet the country's richest man would have to spend \$1 million a day for 42 years to exhaust his fortune. The money that the richest Nigerian man can earn annually from his wealth is enough to lift 2 million people out of poverty for one year.

As already presented, almost all sectors of the Nigerian economy are underdeveloped. In the health sector, a popular scheme (Basic Health Services) was initiated in 1975 to provide essential health services to all Nigerians in urban and rural areas. Then there was the Primary Health Care (PHC). Both were unsuccessful. In the agricultural sector, Operation Feed the Nation (OFN), initiated in 1976, failed, and in 1979, President Shagari launched a green revolution program to increase food production in Nigeria. This also failed and exposed Nigeria to food import. The Universal Primary Education launched in 1975 did not have a chance. The critical tradition of formulating development plans was also abandoned.

Good governance, one which focuses on the provision of both primary and complex infrastructures, has eluded Nigeria for a long time. The assessment of governance in Nigeria since independence in 1960 is that it is weak. In weak states, physical infrastructural networks have deteriorated. The ability to adequately provide measures of other political goods is diminished or diminishing. Schools, hospitals, and other social infrastructures show signs of neglect, particularly outside the main cities and in rural areas. GDP per capita and other critical economic indicators have fallen or are falling, sometimes dramatically; levels of corruption are embarrassingly high and escalating (Rotberg, 2003:4). According to Lewis (2011:9), institutional weakness hampers the general functions of the state and fosters poor delivery of public goods. In this light, Lewis (ibid) notes that the central government of Nigeria has been deficient in the distribution of collective goods, including infrastructure, social provisions, regulations, and public order. Lewis (ibid) concludes that weak governance in Nigeria has contributed to deepening poverty, which has created a foundation for social restiveness, lack of public services, and the fostering of conditions of inadequate policing and erratic administration.

National development is dependent on good governance. Good governance is dependent on institutional and bureaucratic norms and practices. The core object of public bureaucracy is to provide essential public services through the implementation of the government's programs and policies. The bureaucratic environment determines whether and to what extent service production and delivery conform to ethical standards and guarantees citizens' access to public goods. For government bureaucracies to function effectively requires bureaucrats that are trustworthy and have professional ethics. Bureaucratization and service delivery in Nigerian bureaucracy has not been seriously conceived as actions taken toward increased controls and adherence to rigid procedures to ensure citizens' satisfaction in access to public goods. Strong

institutions and bureaucracies are required for the equitable distribution of goods and services (Ibietan & Oni, 2013).

Following the return of democratic rule in 1999, the Nigerian government embarked upon good governance reforms prescribed by the IMF and the World Bank. However, the measures for various reasons have failed to make the government to be effective for Nigerians. National development requires the critical role of bureaucratization in service delivery. Effective and efficient service delivery depends on a well-functioning public bureaucratic system. The good governance landmarks, with enough commitment, can transform the existing Nigerian bureaucracy to a viable bureaucratic structure, with well-defined procedures, protocols, and which have sets of regulations in place that are strictly enforced.

## **Endemic Corruption**

Corruption has received extensive attention in both local and international media, and numerous academic studies on corruption in Nigeria have also been done (Evans & Alenoghena, 2015; Okoduwa, 2007; Evans, 2010; Agba, 2010). Mondlane, Fernanda & Khan (2016:347) present four approaches to understanding corruption. They draw on the World Bank approach in which corruption is about the 'misuse of entrusted power' or 'abuse of public office for private gain'. The second approach finds the World Bank's definition of corruption narrow and advances, activities such as theft, embezzlement of funds, nepotism, patronage, abuse of authority, and conscious engagement in activities that involve a conflict of interest (Adetula, 2011). The third approach to defining corruption favors a more systemic and locally focused approach where issues relating to institutional capacity and cultural norms and practices are essential contributors to its occurrence. Finally, there is the structuralist approach in which corruption is inevitable, if



not a necessary element in the early phase of economic growth. The suggestion here is that there is an inverse relationship between corruption and economic development in the sense that corruption will recede as countries develop. This approach is immediately opposed by relational thinkers who argue that corruption is a behavioral phenomenon that involves conscious engagement in activities that maximize private or personal gain at the cost of the common good. For example, Philp (2006) finds that while individual behavior or attitude are essential aspects of corruption, the systemic elements that enable corruption are far more concerning than individual intentions.

Similarly, Harsch (1993:37) opposes the idea that corruption is an inescapable condition of growth. According to him, in Africa, when money is siphoned, especially at a high level through corruption, such funds are not invested in the economy and therefore do not contribute to growth. He argues that instead, part of the money earned through corruption is redistributed for patronage, to cement political and social ties while millions are carted abroad into foreign banks or real estate holdings. More recently, Amadi and Ekekwe (2014) argue that in Africa, the idea that corruption decreases as the economy grows may not apply as evidence of misuse of public funds by African presidents produces adverse outcomes for development.

The standard view of corruption is the one which finds it to be 'the use of public office for private gain' or 'abuse of public power for private gain.' Development agencies such as the World Bank, IMF, USAID, and various scholars privilege this definition (Bello-Imam, 2005; Heidenheimer and Johnston, 2008). The broader view of corruption, which considers the generalized and pervasive occurrence of bribery, kickbacks, and embezzlement that is, unfortunately, typical in many of the less developed or emerging economies, is more applicable to the discussions here. Corruption in this context is also different from the sectorized type

familiar to Europeans and North Americans, commonly referred to in terms of "white-collar crimes."

In talking to people and following the debate on corruption in conversations, it becomes apparent that one thing Nigerians unanimously agree upon is that corruption is the greatest ill that has pervaded the country since independence. The Nigerian government is the highest employer of labor and, therefore, the number one driver of the economy. Corruption in Nigeria is associated with the rise of bureaucratic institutions. Following the creation of modern public administration in the country, the Nigerian public sector is a site where corruption has a firm grip.

In 1960 the Nigerian civil service evolved from the imperialist interest of maintenance of law and order to facilitate the realization of the developmental aspirations of the country (Ajibade & Ibieta, 2016:10). From 1960 to 1966, despite numerous upheavals, the bureaucrats lived up to their expectations, taking advantage of the nationalistic drive to take initiatives to formulate and implement policies. Since then, Nigeria continues to witness a steep deterioration of its bureaucracy in terms of service delivery. In comparing the post-independence bureaucratic performance to that of the colonial era, Ajibade and Ibieta (2016:9) found that the "civil service in Nigeria functioned more effectively at the time of colonial administration, patterned along the lines of merit." The role of the British colonial administration during this period was the classical one of providing physical and social infrastructures on overhead capital as the foundation of the economy. As noted already, Nigerians did not benefit from the final output of the vast mobilization of Nigerian resources for British capital accumulation. They, however, did benefit from the infrastructure that guided the production of the output, such as roads, schools, etc. According to Yusuf & Yusuf (2009:266), the express goal of the colonial state was to produce

indigenous skilled labor that would sustain the colonial capitalist system in Nigeria. It was cheaper for the colonial state and European companies to hire Nigerian elementary and primary school graduates than British bureaucrats. While the benefits for Nigerians were not the goal of colonial infrastructure, it nevertheless served them well. That Nigerians had access to infrastructure, which facilitated British policies, does not mean that British colonial policy in Nigeria contributed to rural development. Scholars argued that the same lack of concern and commitment of the colonial administration to Nigeria's general welfare became a legacy of the post-independence government.

The abandonment of the Development Plan accelerated the deterioration of the Nigerian bureaucratic institutions. The development plans were an agenda setting strategy for the socioeconomic and political advancement of the Nigerian people. The history of development plans in Nigeria goes back to the colonial era when the British Colonial office directed the colonies to formulate development plans to disburse the Colonial Development and Welfare Funds in 1940. With the recommendation of the World Bank Mission to Nigeria, the National Economic Council was set up in 1955 to coordinate Nigeria's growth in line. The council led to the formulation of a National Development Plan for Nigeria in 1959. The goal of the 1959 Development Plan was to achieve and maintain the highest possible living standards for the Nigerian people. Since 1960, Nigeria has formulated and launched development plans that made it possible for governments to articulate policies in the following areas: equitable distribution of income, increase in employment opportunities; improved social services; and efficient allocation of available resources to eliminate waste (Ayinla, 1998:41).

The formulation and implementation of development plans became a tradition for successive governments in post-independence to formulate plans to improve the socioeconomic and

political conditions of Nigerians. The policies contained in development plans address different aspects of the society, including social, economic, and political aspects (Olaniyi, 1998:104). The development plan facilitated 'adherence to the script' in the development and equitable distribution of public goods and services. Unfortunately, there began a gradual movement towards the neglect of the national development plans. The neglect created confusion and made the business of governance difficult. The neglect of development plans in Nigeria has had grave consequences for the country (Salawu, Muhammed, Adekeye & Onimajesin, 1996:3). Between 1960 and 1985, Nigeria had four development plans, referred to as the First, Second, Third, and Fourth National Development Plans. Each of these development plans had its focus and well-articulated objectives and had far-reaching effects on the nation's developmental aspirations (Salawu, Muhammed, Adekeye & Onimajesin, 1996:3). Between 1945 and 1986, when development planning was in operation, there was a spirited effort for social and economic development, although it was not always successful. Beyond this period, the practice of formulating development plans was abandoned.

By 1988, the well-established tradition of formulating five-year development plans was suspended. The practice of reading the annual budget is no longer associated with any specific development project, which eroded public trust in government and weakened the effectiveness of governance. As a result, the quality of life began to decline. There is a consensus that the instrument of both diagnosis and remedy to development was the "development plan" (Tordoff, 1993). Similarly, Adedeji (1989) noted that the various development plans best captured the economic aspirations of Nigeria. Since then, the government has embarked on different strategies, including the five-year National Development Plans, the three-year rolling plans between 1990 and 1998, and the National Economic Empowerment and Development Strategy

(NEEDS) between 2003 and 2007, all in search of an appropriate developmental strategy.

According to Salawu, Muhammed, Adekeye & Onimajesin, (1996:17), the neglect of development plans negatively impacted economic growth. The neglect allowed the plunder of the country's resources earmarked for development, poverty increased, and corruption rose to high proportions. They conclude that:

With the jettisoning of development plans, which today remains one of the greatest tragedies occasioned by military rule, corruption was unchecked. The rules and regulations for doing official business, which development plans entail, died. Consequently, cynicism, contempt for, and cause of integrity pervade every level of the Nigerian bureaucracy, which used to be the vehicle for the execution of development plans in the past. Budgets are not tailored towards any development targets, are read without execution. This has provided an avenue for siphoning public funds by those in power.

Today, instances of official misuse of resources for personal enrichment have become entrenched in the Nigerian public service. The research finds that corruption in Nigeria is an institutionalized phenomenon. Corruption has led to the erosion of the institutional and administrative capacity of government and the decay of infrastructural facilities like roads, communications, inefficient and ineffective security outfits, and inconsistent delivery of services across all sectors and sections of the economy (Agba, 2010; Okoduwa, 2007). Embezzlement of public funds is the most prevalent and devastating form of corruption in Nigeria. The case of the Ecological Funds project is just one example of how corruption can indirectly influence disasters. In 1981 the Fund was established through the Federation Account Act (1981). It was an intervention initiative intended to address the multifarious ecological problems that have ravaged communities across the country, including those ecological problems related to flooding. The principal mandate of the Federal Account Act was to facilitate the distribution of resources. The funds were to address some of the ecological problems such as soil erosion, flood, drought, desertification, oil spillage, pollution, storm, tornadoes, bush fire, crop pests, landslide, and

earthquakes. The initiative achieved nothing more than a string of headlines about fraud and the embezzlement of the funds. The allegation that NEMA officials received bribes in kind or cash from flood victims before providing them with relief materials reveals the widespread and endemic nature of the practice. One SEMA staff confirmed that such incidents were prevalent but denied participating in them.

Many Nigerian leaders helped boost the economies of other nations by depositing embezzled money into foreign banks. In 2004, for example, Sani Abacha, who served as the de facto president of Nigeria from 1993 to 1998, was the fourth most corrupt leader in history.<sup>61</sup> Abacha's administration notoriously looted upwards of \$3 billion in the 1990s. During his regime, Abacha and his family reportedly stole a total of £5 billion from the country's coffers.<sup>62</sup> After his death, an investigation was carried out to determine the amount of money he embezzled in the country's gas plant construction project. As a result of the investigations, accounts containing about \$100 million in stolen funds were frozen (Hector, 2004). The Swiss government agreed to return the looted funds and remitted US\$322 million in 2017 (Webby, 2018).

Bribery is another form of corruption that has had a significant impact on the economy. Nigerians regard bribery as the third most important problem facing the country (UNODC, 2017).<sup>63</sup> Public officials in Nigeria show little hesitation in asking for a bribe. About 400 billion Naira (approximately \$1.2b) is spent on bribes each year (ibid). Corruption skews attempts at

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<sup>61</sup> "Introduction to Political Corruption" (PDF). *transparency.org*. London. 25 March 2004. p. 13.

<sup>62</sup> <https://www.nytimes.com/2004/08/19/world/late-nigerian-dictator-looted-nearly-500-million-swiss-say.html>

<sup>63</sup> [https://www.unodc.org/documents/data-and-analysis/Crime-statistics/Nigeria/Corruption\\_Nigeria\\_2017\\_07\\_31\\_web.pdf](https://www.unodc.org/documents/data-and-analysis/Crime-statistics/Nigeria/Corruption_Nigeria_2017_07_31_web.pdf)

developing infrastructure by allowing substandard structures and services to create an opportunity for self-enrichment. An important aspect of administration is professionalism, and one of the essential sources of bureaucratic power is expertise. As a result of bribery, bureaucratic practices in Nigeria lack professionalism. There is too little requirement for expertise. For example, substandard highways have proven costly for many Nigerians as they begin to fall apart immediately after construction and lead to the unnecessary loss of lives.

In 2017, anti-corruption charities, Global Witness and Finance Uncovered, suggested that the oil giants Shell and Eni made a \$1.3 billion payment for a lucrative but undeveloped oilfield in Nigeria. The funds never went to public trust. Instead, almost all the money, which was equivalent to nearly half of that year's national education budget, was divided as kickbacks among high-ranking government officials (Yomi, 2017).<sup>64</sup>

The costs and consequences of corruption are far-reaching, affecting the whole country (Evans & Alenoghena, 2015). It creates instability in government, emasculates democratic institutions, and impedes economic development. It results in biased decision-making, where personal enrichment takes priority over the establishment of rights for all. For example, government expenditure may be prioritized based on opportunities to extort bribes rather than based on public welfare. Corruption translates into human suffering when low-income families pay bribes for doctor visits or clean drinking water. The costs of bribes are tactically and technically borne by the poor, vulnerable, and needy when the infrastructure they need to build resilience to the threats of natural hazards are not delivered. It impedes the building of essential infrastructure and leads to failure to deliver essential services, like education or health care, as corrupt leaders' skim funds (CPI, 2012).

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<sup>64</sup><https://qz.com/africa/963465/some-of-the-worlds-biggest-countries-have-managed-to-wrangle-extreme-poverty-except-nigeria/>.

The World Development Report (1997) finds that even in countries where corruption is not widespread, it still has an impact on economic performance. This is because the higher transaction costs and increased uncertainty dissuades potential investors. The unstable nature of the Nigerian power sector, which continues to be dogged by corruption, remains a massive deterrent to both local and international investors. In Nigeria, corruption remains a deterrent to development in general. Too many disasters are associated with the misuse of public funds, or the looting of natural and economic resources to the most powerful (Wisner & Gaillard, 2009:155). The judicious and equitable utilization of the funds as mandated through strict oversight could reduce the high risks of exposure to recurring floods in Nigeria.

A more direct relationship between Institutional Neglect and the flooding is found in the renege on the agreement to construct a dam by the Nigerian government to contain the runoff of water upstream from Cameroon. When water from the Lagdo dam in northern Cameroun was released, it contributed to flooding the Benue River in Nigeria. The heavy rainfall which precipitated the 2012 flooding lasted nearly a month. The rains reportedly fractured the Lagdo Dam along the upper reaches of the Benue River, which in turn caused the dam to burst, thereby flooding the surrounding communities. Actions required 30 years earlier could have prevented this event. According to an agreement reached by both countries in 1980, the Nigerian government would construct a dam similar to the Lagdo Dam along the Benue River's course, which will contain the overflow released upstream from the Lagdo Dam. The Nigerian government designed a shock-absorber dam in 1981 tagged the "Dasin Hausa Dam" (Simire, 2013). The anticipation was that the proposed dam would be a multi-purpose facility. Aside from cushioning the effect of flooding, the dam would also generate some 300 MW of electricity and provide irrigation waters for about 150,000 hectares of land. The irrigation would also provide



crop tonnage of 790,000 tons in three other adjoining states, including Adamawa, Taraba, and Benue states. Also, the shock-absorber dam would provide employment opportunities for 40,000 families and make available navigational routes for the Benue River to the Niger Delta (Simire, 2013). Although provision for the budget was available for the project, characteristically, the Nigerian government failed to honor their agreement to construct a dam similar to the Lagdo Dam. Over the years, the allocation of federal budget monies to construct dams to receive waters released from Cameroon continued. The project never materialized before the 2012 flooding. It remains to this day, just a design. Not only was the construction of the dam neglected, but several other viable proposals also did not receive consideration. The flood, destruction of property, and loss of lives continued needlessly for decades without the government showing any concern until the carnage of the 2012 flood. It is a stark demonstration of how institutional neglect creates social vulnerability. No government official would authoritatively say what exactly was going on. Both the Benue state government and NEMA spokespersons stated that work on the receiver dam was "ongoing" (RNW, 2012). On their part, Cameroonian authorities stated that they strictly followed protocol and had always informed Nigeria whenever the water level rose. The flood victims blamed the government for allowing Cameroonian authorities to release water from its Lagdo Dam. However, the Cameroonian government had no responsibility to the Nigerian people.

As pointed out \already elsewhere in the chapter, corruption weakens the ability to govern. Corrupt practices create inequality and hamper the distribution of public goods. A 2017 OXFAM report<sup>65</sup> exploring the drivers of inequality in Nigeria finds that about \$20 trillion was stolen

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<sup>65</sup> [https://www-cdn.oxfam.org/s3fs-public/file\\_attachments/cr-inequality-in-nigeria-170517-en.pdf](https://www-cdn.oxfam.org/s3fs-public/file_attachments/cr-inequality-in-nigeria-170517-en.pdf)

from the treasury by public officeholders between 1960 and 2005. This amount is larger than the GDP of the United States in 2012 (about \$18 trillion). Corruption prevents the development of infrastructure, raises the price of infrastructure where corrupt officials inflate the costs of projects, and reduces the quality of, and economic returns from infrastructure investment. Corrupt practices enhance remoteness, promotes weak governance, and engenders mass poverty.

## **Conclusion**

This chapter is the most consequential for the research. It addresses the argument of the research that the social vulnerability approach does not go far enough to establish how the factors that create social vulnerability are produced. In adopting the Institutional Neglect analytical framework developed in Chapter 3 for the analysis, the chapter establishes how Institutional Neglect organized social vulnerability to the flood disaster. The analysis demonstrates how various institutional bureaucratic interventions converged to produce social vulnerability. The chapter illuminates the role that institutions play in creating the conditions that make disasters possible, which, as demonstrated in Chapter 2, is often not sufficiently considered. The analysis shows that the flood disaster was not solely a natural hazard event. Instead, the flood was a product of disparate institutional interventions, including endemic corruption, poor governance, poor infrastructure, remoteness, and mass poverty.

Additionally, the chapter demonstrates the immense value of the analytical framework of Institutional Neglect. Supported by empirical accounts of bureaucratic dysfunction, the framework facilitated a systematic analysis using the factors of Institutional Neglect to demonstrate how disasters are organized. It cuts through the 'analytical red tape' in determining the source of social vulnerability in the analysis of disasters. The framework immediately directs attention to the root of vulnerability. It fills a gap as an emerging framework for understanding

social vulnerability in disaster and vulnerability research, where literature has hitherto not provided a link to the factors that influence social vulnerability. As seen in the analysis, the source of social vulnerability is immediately made visible.

The framework also provides flexibility to organize the analysis in ways that give a broader context and provide maximum clarity. For example, 'remoteness' discussed immediately following the section on poor infrastructure helped to emphasize the impact of infrastructure in creating vulnerability to the threats of natural hazards in rural areas. Other factors in the Institutional Neglect framework also helped to highlight the potential consequences of critical shortcomings of institutions. These factors provided the opportunity to understand how Institutional Neglect works to undermine resilience to the threats of flood hazards.

Finally, and perhaps more importantly, the analysis shows that the conditions that produced social vulnerability did not result from a lack of resources but rather from the mismanagement and misappropriation of resources. The analysis provides an account that reveals how the systematic failure of institutional infrastructure was informed by the abuse of public office, dysfunction, inefficiency, and a lack of accountability. The neglect fostered by these processes produced social vulnerability to the flood hazards.

Institutional Neglect fostered the abandonment of the norms of good governance even at its most basic level, in ways that exposed a large section of the population to the threats of flood hazards. The conclusions drawn in this chapter are not only consistent with the research argument but also reinforce the immense advantage derived from adopting the Institutional Neglect framework in the analysis of disasters.

# Chapter 8

## CONCLUSIONS

### Flooding as the neglect of development

#### Introduction

This research has tried to understand the problem of flooding in Nigeria by focusing on five selected locations in three Local Government Areas of Benue State. The research took as its

Ultimately, Institutional Neglect is about the failure of equitable distribution of public resources at local scale, and of development on the broader national scale. Institutional Neglect breeds underdevelopment. To understand Institutional Neglect is to understand underdevelopment.

point of departure, the 2012 flooding that devastated most of Nigeria. In order to understand the circumstances of the 2012 flooding and why flooding disasters have become a seasonal staple in Nigeria, especially in Benue State, this case study research adopts the social vulnerability approach to examine the factors which converged to produce the disaster.

However, the social vulnerability approach could not adequately address the questions surrounding the flooding. Therefore, the Institutional Neglect framework was developed to provide a broader understanding of the flood disaster. The research utilizing the social vulnerability and Institutional Neglect frameworks as well as various qualitative strategies and processes, including the extensive review of literature, interviews, focus groups, and personal observations concludes that the 2012 flooding resulted from social vulnerability influenced by Institutional Neglect.

To determine and measure social vulnerability in disaster research requires the development of a Social Vulnerability Index (SoVI). The social vulnerability index (SoVI) is one of the most popular tools for analyzing and understanding the complex and multi-dimensional nature of

social vulnerability. The SoVI was created using selected social vulnerability indicators that emerged from the results in the research and those from other vulnerability studies (Cutter et al., 2003). Results from the SoVI shows a strong correlation between social vulnerability and the socio-demographic features of the research locations (social vulnerability indicators). The indicators include poverty/socioeconomic status, lack of access to social/physical infrastructure, and isolation/marginalization of rural communities. Based on the findings, the research concludes that:

- The 2012 flooding event resulted from social vulnerability to the threats of natural hazards.
- The social vulnerability was created by fragile socioeconomic conditions and general precarious livelihoods of the flood victims.
- The socioeconomic fragility and overall precarious livelihoods were produced by the failure of the equitable distribution of public goods that help to build resilience to the threat of flooding.
- Institutional Neglect is a function of the failure of bureaucratic institutions and the political ruling class to provide service delivery and equitably distribute public goods, which can help build resilience to the threats of flooding.

During the flooding event, the official claim was that the flooding disaster was a natural event precipitated by heavy rainfall. As the research shows here, this could not be further from the truth. Social vulnerability arises from events that have occurred in the past as well as political, socioeconomic, and circumstances of everyday living. At the time of the flood, the existing social, economic, and political conditions created extreme vulnerability and exposed a significant section of the population to the threats of natural hazards. The research finds a strong correlation between the flooding and underlying socioeconomic and institutional factors culminating from actions and inactions by institutional operatives.

Theorists of vulnerability such as Wisner and Gaillard (2009), recognize the role of Institutional Neglect in creating risks of disasters and note that "chronic daily neglect by those with social, economic and political power leads to fragile and vulnerable livelihoods for people exposed to the risks of natural hazards" (155). Neglect also extends to understanding the issues of why people suffer as well as who suffers from disaster. On the local scale, like the areas in this research, people affected by disasters are chiefly members of neglected segments of society, i.e., the poor and most marginalized social groups. Neglect was a recurrent theme throughout the research. There was evidence of neglect everywhere in the communities of research- in how people lived and in their environment. Neglect was visible in the absence of infrastructure and the deplorable conditions of the existing one. Neglect was discernible in the starkness and abjectness of poverty. Neglect became the lens through which social vulnerability in the flood disaster could be fully understood. The same conclusion was also drawn in the review of some notable disasters in Chapter 2. This persuaded the development of the framework of Institutional Neglect in Chapter 3.

Given that the causal structure of vulnerability is partially dependent upon the physical properties, the research adopted additional analytical frameworks to enhance and broaden the discussions. The progression of vulnerability model (Wisner, Gaillard, and Kelman, 2012: 32) was adopted to generate a progression of the vulnerability model of the 2012 flooding. The model traces the impacts of the flooding on the residents to a series of socioeconomic and political factors and processes that generate vulnerability. Cutter's hazard of place model (1996) was adapted to combine the effects of social and biophysical vulnerabilities and demonstrate how they interact to produce place vulnerability- social vulnerability to the threats of flood hazards.

## **Institutional Neglect as the root of social vulnerability**

In disaster and vulnerability research, the role of Institutional Neglect in organizing disasters up until now is grossly understated. Despite its overt significance in incubating disasters, as noted in the literature review in Chapter 2, Institutional Neglect has not received adequate attention as an essential tool for understanding disasters. Attention to the enormous influence of Institutional Neglect on disasters is mostly muted. Past and current literature has tiptoed around the phenomenon as a critical element of social vulnerability; and failed to capitalize on its significance to understand disasters. This research identifies Institutional Neglect as a key component to understanding social vulnerability and developed it in Chapter 3, both as conceptual and analytical frameworks. The conceptual and analytical frameworks of Institutional Neglect are applicable to other disaster and vulnerability research in similar settings.

Most general conditions or indicators of social vulnerability are attributable to Institutional Neglect. Research shows that the indicators/factors of social vulnerability follow from Institutional Neglect. All the indicators of the social vulnerability identified in this research have their origin in Institutional Neglect. While not all social vulnerability indicators are tethered to Institutional Neglect, all the factors of Institutional Neglect produce social vulnerability. Within the context of disaster vulnerability, where there is institutional neglect, there is always social vulnerability, and where there is social vulnerability, there is always a form of institutional neglect at work.

## **Nigeria: And the crisis of development**

The function of the nation-state is to deliver political (public) goods to persons living within its designated borders. The modern state focuses on and answers the concerns and demands of people, by organizing and channeling their interests, often but not exclusively in furtherance of

national goals and values. Most importantly, nation-states champion the local concerns of their people and their internal economic, political, and social realities. The realization or failure to realize these expectations validates or invalidates the local political democratic culture.

A question that confounds the world and one regularly raised by Nigerians themselves is how a country of such enormous resources finds itself in the present social, economic and political straits, with a large number of its population living below the poverty line and lacking resilience to the threat of natural hazards. As discussed in Chapter 8, what determines the legitimacy and viability of a state is how it performs concerning the effectiveness of its bureaucratic institutions to deliver public goods to its citizens equitably. Such political goods include access to the necessary infrastructure and other resources, which help build social capital and resilience to undue exposure to harm. The most substantial impediment to Nigeria's progress lies with its inability to equitably distribute the country's immense resources to citizens. A London-based think tank, the Legatum Institute, in a recent report that measured "prosperity delivery" to citizens in comparison to the country's actual wealth.<sup>66</sup> Among the 38 countries covered by the research, Nigeria ranked 26th, with the report saying it was "under-delivering" prosperity to its citizens.

Looking at Nigeria through the taxonomy of necessary infrastructure development as detailed in Chapters 6 and 7, one can conclude that it failed virtually all the conditions for development and, therefore, is unable to ascend the path to prosperity. Precisely, Nigeria failed to develop strategies to protect its citizens from the threats of flood hazards. The failure of institutional infrastructure hindered access to social and physical infrastructure. The lack of infrastructure, indeed, has a significant impact on Nigeria as a whole, with the rural areas taking

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<sup>66</sup> <https://qz.com/africa/963465/some-of-the-worlds-biggest-countries-have-managed-to-wrangle-extreme-poverty-except-nigeria/>



the brunt of this impact. The failure of institutional infrastructure and the abandonment of development plans engendered a steep and steady decline in the standard of living of many Nigerians, especially rural dwellers, and keeps Nigeria underdeveloped.

The sole purpose of development is to provide opportunities for the development of people and engender progress in society. Institutional Neglect has denied many Nigerians the opportunity for human development which among others, can help individuals to build resilience to the threats of natural hazards. Human development is about investing in people to expand their choices to live productive lives, with freedom and dignity, by providing access to critical resources in the form of infrastructure development. Human development facilitates the accumulation of human and social capital, which enables individual empowerment and the opportunity for the accumulation of resources. A society's wellbeing is derived from its peoples' human and social capital. Human capital is the sum of a population's health, skills, knowledge, experience, and habits, all of which contribute to building social capital that forms the basis for individual and societal wellbeing. Wellbeing is, therefore, a measure of the individual's or society's social capital. The Human Capital Index (HCI) measures the amount of human capital that a child born today can expect to attain by age 18. It takes into consideration the average achievements in three basic dimensions of human development. First is life expectancy, which is measured by a long and healthy life. The second dimension is access to education/knowledge and income per capita, which includes a decent standard of living across geographic areas and over time. The third dimension is the overall measure of wellbeing. Human capital enables people to realize their full potential, and it is the primary factor driving nations' economic growth. It translates the productivity of the next generation of workers compared to a benchmark of complete education and full health. Three critical levers used to assess Nigeria's HDI are the

Corruption Perception Index (CPI), a productive workforce, and the Distance to Frontier (DTF) score. The DTF score is a measure of ease of doing business or enabling the business environment produced.<sup>67</sup>The PwC combining scores from these three levers, classifies Nigeria as a "low human development" country, with a rank of 152 amongst 188 countries.<sup>68</sup> The findings of the research lend credence to these results. It requires access to resources such as education, health care, markets and infrastructures to accumulate human capital. As noted in Chapter 6, while the respondents used some type of social capital to address the challenges of flooding, it was fragile and would not stand a prolonged disaster event. Enduring social capital can only be built and sustained through access to concrete infrastructure. Access to resources helps in the accumulation of social capital. The accumulation of human and social capital through human development will ensure that individuals have a minimum level of self-protection capacity in the event of a natural hazard.

Another area contributing to Nigeria's low HDI is the low productivity workforce. Countries that have very high levels of HDI are associated with a more productive workforce. Although Nigeria has the advantage of a large workforce of over 70 million, the majority are under-skilled, underemployed or unemployed. According to the UNDP's National Human Development Report on Nigeria (2018)<sup>69</sup> Nigeria's labor productivity remains relatively low, with the average productivity of a worker in Nigeria being as low as \$3.61/hour representing a marginal increase from \$2.79/hour in 2010 and relative to \$19.68/hour in South Africa and \$29.34/hour in Turkey. In 1981, the minimum wage in Nigeria was fixed at ₦120 (50c) per month. It was reviewed upwards to ₦5,500 (\$16.00) in 2001, and the current ₦18, 000 (\$50.00) in 2010 despite the

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<sup>67</sup> PwC (PricewaterhouseCoopers) <https://www.pwc.com/ng/en/assets/pdf/the-future-of-nigeria-improving-hdi.pdf>

<sup>68</sup>  $0.614 + 0.0009 \text{ (CPI Score)} + 0.0012 \text{ (DTF Score)} + 0.0021 \text{ (Labor productivity)} = \text{HDI score of } 0.51$

<sup>69</sup> [http://hdr.undp.org/sites/default/files/hdr\\_2018\\_nigeria\\_finalfinalx3.pdf](http://hdr.undp.org/sites/default/files/hdr_2018_nigeria_finalfinalx3.pdf)

₦52,200 proposed by the Nigerian Labor Congress (NLC). The current minimum wage was signed with a lifetime of five years that elapsed in August 2016. In April 2017, the Nigeria Labor Congress (NLC) and the Trade Union Congress (TUC) submitted a formal proposal to the Federal Government of Nigeria for an increase of the current minimum wage from ₦18,000 to ₦56,000 (\$130.00). Today, the Federal Government is fighting to negotiate it down to ₦30,000 (\$80.00). Even at ₦30,000, the federal government is still questioning the justification, affordability, and sustainability of the increase. Comparing the current minimum wage in Nigeria to other African countries vis-a-vis their per capita income, using data from World Development Indicator, shows that out of the 19 African countries compared, including Malawi, Botswana, Egypt, South Africa, Senegal, Tanzania, Cote d'Ivoire, Ghana, Zambia, Chad, Congo Republic, Equatorial Guinea, Morocco, Cape Verde, Angola and Mauritius, Ghana and Kenya, Nigeria has the second-lowest (18th) minimum wage rate but 11th and 7th position in inflation rate and adjusted net national income per capita respectively in 2015/2016. These show that the minimum wage of ₦30,000 is much less relative to other African Countries- most with much lesser economies. It shows a high per capita income-minimum wage gap of about US\$146.3 between Nigeria and South Africa (Urama, 2019: 1 – 3).<sup>70</sup>

The business environment is also an area that contributes to low human development. Countries with very high levels of HDI have fewer barriers to doing business. Corruption has created a weak business environment that is holding back Nigeria's economic growth potential and slowing down development. In the World Bank's Ease of Doing Business Index for 2016, Nigeria ranked 169th out of 189 countries. Nigeria's score is lower than Niger, Madagascar, and Sierra Leone. Amongst the larger countries with a population of 50 million persons and above,

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<sup>70</sup> <https://www.researchgate.net/publication/336070555>  
The\_Proposed\_30000\_Minimum\_Wage\_in\_Nigeria\_Affordability\_and\_Sustainability

Nigeria ranks 25 out of the 27, only ahead of Bangladesh and the Democratic Republic of Congo. Corruption, weak regulatory and institutional framework, and poor infrastructure continue to pose significant challenges to the business environment. Improving Nigeria's ease of doing business requires massive investments in physical infrastructure as a strategic priority in enabling growth and social impact opportunities. An enabling business environment attracts both domestic and Foreign Direct Investment (FDI), which could become a catalyst for economic development. Strengthening public financial management will enhance Nigeria's capacity to perform its core functions, including providing public services needed to build resilience to the threat of natural hazards. There is evidence that economies that rank well on the Ease of Doing Business index also score well on Transparency International's Corruption Perception Index.

## **Recommendations**

This research makes the argument that the root of vulnerability to flooding in Benue State, Nigeria, is Institutional Neglect. Notably, corruption was identified as one of the foundational and reinforcing factors of Institutional neglect foundational to creating social vulnerability. Corruption decreases the efficiency and quality of public institutions. Although curbing corruption cannot be legislated, tackling corruption in the public sector will reduce the pilfering of public resources and the level of nepotism that turns a blind eye to such acts as the hiring of incompetent officials. Chapter 7 noted that hiring incompetent workers results in the production of poor infrastructures such as roads, buildings and drainage systems. Eliminating corruption will create the environment and opportunity for the development and accumulation of social capital, which will help build resilient communities. Currently, attempts at controlling corruption in Nigeria include, formulating and supporting anti-corruption strategies; closing loopholes that

encourage corrupt practices; and encouraging the disclosure of corrupt practices. Ensuring that anti-corruption initiatives firmly take root will enhance human development.

While eradicating corruption cannot be legislated, other actions that curb it can be employed and deployed. Demanding and enforcing transparency and accountability are the first steps to curbing corruption. Institutionalizing accountability means that it ceases to be a simple abstract concept of governance and becomes a mainstream requirement of those who hold public office. Greater accountability in public institutions will encourage the provision of quality social and physical infrastructure. Public officials must account for their handling of funds by being transparent about transactions. Enforce accountability is through transparency. The absence of transparency in the use of public resources dramatically diminishes accountability and institutionalizes corruption. Addressing corruption requires accountability and begins with transparency.

It was apparent right at the start of this research that there was a significant disconnect between the people and the government. Both government officials and the people referred to one another as if the other were some abstract phenomenon. The senior government officials had no idea about what was happening on the ground with the people, while on the other hand, the people had no idea about what the government was doing. In the Hyogo Framework for Action (HFA)72 model of disaster risk governance, the need to engage communities in managing disaster is recognized and emphasized. The UN Office for Disaster Risk Reduction (UNDRR) strongly recommends the Hyogo Framework for Action (HFA) model of a horizontal and vertical integrated systems approach which encourages strong coordination across sectors, and a delegation of responsibilities at the local level. Such integration will promote much-needed transparency and help to build meaningful partnerships between communities and their

government. Curbing corruption, institutionalizing accountability, and demanding transparency are good starting points for addressing social vulnerability to the threats of flooding. When these steps are put in place:

a) Deliberate attention should be given to national development plans and budgets that target investment in human capital. Policies and programs should focus on targeted investments in the human development of poor households. These should include increased local control of resources, local institution strengthening and capacity-building, and greater oversight of local governments as delivery mechanisms.

These policies and programs must mainly target the rural areas, the urban poor, women, and children. In 2012, Nigeria ranked 139th out of 176 countries in Transparency International's 2012 Corruption Perceptions Index (CPI, 2012). At the macro level, the government's attempt to build social capital must embody its capability and credibility to eliminate corruption and exhibit transparency in decision-making.

Significant for poorer households, as those in this research, is long-term access to lifeline infrastructure such as water, electricity, transportation and communication, all of which have a direct effect on wellbeing. Without lifelines, even if there is no direct damage to the population, everything grinds to a halt. A risk assessment must address vulnerabilities in lifelines, which, as seen in this research, are amplifiers for other vulnerabilities. The government must develop and implement policies and strategies that provide adequate and sustainable levels of funding for building resilience to the threats of natural hazards. In particular, the government must make efforts towards supporting flood victims by nurturing economic growth.

b) The commonplace conceptions in which poverty is a necessary condition underlying vulnerability, indeed, have merit. This is proven in the research. Poverty plays

a significant role in creating vulnerability because the means of resistance or recovery from a natural hazard event is contingent upon the range of assets that form a defensive strategy against the threat of natural hazards, and which can be used to build resilience. The chronic nature of poverty, therefore, has immediate implications for the design of poverty reduction strategies.

There should be an emphasis on the development of all poverty-stricken areas through integrated strategies and programs. Such strategies and programs must include sound and sustainable management of the environment, resource mobilization, poverty eradication and alleviation, employment, and income generation. The government must create targeted poverty alleviation and reduction strategies that provide all persons with the opportunity to earn a sustainable livelihood to help reduce the sensitivities of the poor to disasters. The government should adopt a pro-poor development strategy that targets poor communities living in areas prone to natural hazards as well as adopt development strategies that aim to improve household income security and necessary development conditions by providing good roads, communication networks, education, electric power, which reduce sensitivities to disaster. In particular, the government must make viable efforts to support flood victims by nurturing economic growth.

c) The government should establish appropriate infrastructure and support systems to facilitate the alleviation of poverty by implementing projects, programs, enterprises, and lifestyles sustainable at the grassroots level. Enhancing infrastructure and economic development, especially for the rural dwellers whose produce, for example, has no access to markets, due to weak transport and energy infrastructure, will minimize residual disaster risk. The government must integrate 'mainstream' disaster risk considerations in designing development initiatives in national development planning and budgeting processes at national, provincial, LGA, and village/settlement levels.

Infrastructure development should also focus on reducing physical vulnerability and should include:

i. The restoration of existing physical infrastructure and provision of new ones that protect the people and the environment, such as the construction of new drainage channels, canals and aggressive restoration of existing ones, particularly within the affected areas, to enhance the free flow of water. Dredging of River Benue should also be a priority. Decades of sedimentation has made the river shallow and highly susceptible to flooding.

ii. Levies or other barriers should be erected to control the overflow of the River Benue and to serve as a protective barrier between people's home and the river, particularly in the indigenous communities such as Ocholonya.

iii. Except for Indigenous communities, such as Ocholonya and Angwan Jukun, the government should relocate all those living on the banks and within the buffer zones of River Benue and its tributaries.

iv. Enact legislation that bans new development on floodplains, particularly in the major towns such as Makurdi and Katsina-Ala. Proper urban and spatial planning must inform all development decisions. The government should aggressively enforce existing laws that prohibit indiscriminate solid waste and garbage dumping.

v. A vital element of a state that wants to escape poverty and be resilient threats of natural hazards is ensuring a critical mass of well-informed citizens. Education is the most powerful tool for reducing poverty, encouraging peace and stability, and advancing society. Education is the way to mobilize an informed citizenry to transform any society. Education is critical for economic growth and



development. It serves as a critical index for measuring the progress of the development agenda. Deliberate efforts need to be made to develop the education sector, especially in rural areas. Development requires the provision of educational infrastructures and facilities, sustainable curriculum and policies, the employment of well qualified teaching staff, as well as strengthening the oversight functions on educational facilities and administrative functions of publicly funded schools.

d) Preparedness and mitigation, which are the most significant steps to disaster management, must take into account the income-generating power of the people. A useful study of the post-drought impact of relief aid in Zimbabwe (1994:95) asked what the difference would be if farmers received a disbursement of Z\$100 drought relief post disaster before the disaster in the form of agricultural equipment. The results indicated that under all scenarios, income was substantially higher in non-drought years, allowing households to accumulate buffer stocks that can be used during drought years. Accumulating buffer stocks significantly reduces poverty (Owens et al., 2003).

The government should invest in the development of emergency response mechanisms and rapid response systems, flood data gathering, and flood emergency preparedness appropriate to the research areas. Most rural dwellers have a sixth sense about their environment, drawing on traditional knowledge. Appropriate training and communication material should be provided to improve community awareness of disaster events, community preparedness, and practical household response strategies for flooding. The government should invest in emergency control centers and automated weather stations and review the disaster monitoring and early warning system. Serious

consideration must be given to an end-to-end warning system for flooding to identify how to strengthen monitoring, the generation of appropriate information, and the communication of early warnings to communities.

f) Nigerian government should honor the 1980 agreement between Nigeria and Cameroon by revisiting the construction of Dasin Hausa Dam in Fufore LGA of Adamawa state to curtail the gushing water released upstream from Lagdo Dam thereby curbing annual flooding.

## **Postscript**

The goal of all research is to expand the boundaries of knowledge and create better understandings of the problems that humanity encounters. This research is no different. The goal of this research is to expand the knowledge of the problems of exposure to the threats of flooding encountered by communities in Benue State, Nigeria. Despite the physical challenges and emotional toll, the research was generally a rewarding experience. The physical challenges navigating treacherous terrains of bad roads and the hyper security situations resulting from Boko-Haram activities were all worth the learning outcomes achieved in the research. The research provided a remarkable opportunity to meaningfully contribute to disaster research in the area of vulnerability to natural hazards. The research makes valuable contributions to the very limited scholarly work on flooding in Benue State. Institutional Neglect has been a dominant factor in disasters for a long time but has not received the recognition its role deserves in disaster research. The opportunity to develop Institutional Neglect as a framework for understanding disaster was, indeed, gratifying. It is the first time the framework is applied in the analysis of disaster. I imagine that other researchers will build on the concept. Overall, the research provided

concrete findings presented earlier in the chapter that could guide policy and disaster management in Nigeria.

Today, Nigeria has a significant portion of its population vulnerable and exposed to the threats of natural hazards, particularly flooding. They lack access to physical and social infrastructure. These are infrastructures which help citizens to accumulate resources necessary for building resistance to the threats of natural hazards. In the end, Institutional Neglect, which is what this research is about, is broadly the failure of development in Nigeria. Nigeria has an immense potential to reorient and redirect its focus towards development and to facilitate human development. The development of both social and physical infrastructures has significant benefits and exponential returns. Nigeria accounts for 20% of the population of Sub-Saharan Africa (SSA), and as per current population projections, it will be the 3rd most populous country in the world with over 400 million people by 2040. A healthy, well-nourished, well-educated, and skillful population provides the foundation for a productive life and a prosperous nation. Investing in human development means that future workers in Nigeria can compete in the dynamic labor markets of the emerging digital economy, and at the same time, have a stake in their community and country. When a population feels they have a stake in their government, it helps to build stability and reduces the drivers of vulnerability to the risks of natural hazards and conflict. Also, as Africa's largest and most populous economy, a stable and prosperous Nigeria is critical for regional stability and faster poverty reduction in all West Africa.

Nigeria can escape poverty and fragility traps. As the LSE-Oxford State Fragility Commission<sup>71</sup> set out in its report, the solutions to state fragility are primarily domestic. Nigeria

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<sup>71</sup> <https://www.theigc.org/research-themes/state/fragility-commission/>

must build reliable and effective institutions of governance, develop the right societal norms and values, create a business and market-friendly environment, have leaders with the vision and competence to transform the nation, and create an enduring political settlement that engenders harmony and cohesion.

No one is more interested in reducing disaster risk than the communities whose survival and wellbeing is at stake, and no one knows better the local conditions of vulnerability than disaster victims themselves. Many studies emphasize the capacities of local communities to face natural hazards on their own should they be empowered with adequate resources. However, poor governance has left opportunities for change and sustainable disaster risk reduction untapped. The federal government could revamp the administrations at the local level to build partnerships with people at the local level for disaster reduction. As presented in the recommendations, community-driven development initiatives can provide adequate disaster response and recovery support, and often transform disaster risk reduction from a reactive strategy to a more proactive risk management approach. To explore the knowledge and skills of communities by adopting a community-driven approach will reduce stress on government agencies and reach a vast number of poor people.

Finally, Nigeria has enough material and human resources to respond adequately to the challenges of the types and levels of flooding considered in this research. Nigeria also does not lack the vision of a developed society that is resilient to the threats of natural hazards. Nigeria's ability to envision a society that is developed and resilient to the threats of natural hazards is evident in the numerous failed attempts at eradicating poverty. Nigeria lacks the political will and the moral consciousness to lift itself and its population above the culture of corruption and to execute a vision of development for its people. Mustering political will requires rebuilding the

institutional infrastructure by curbing corruption, institutionalizing accountability, and demanding transparency. These are the first steps to reversing Institutional Neglect, reducing vulnerability, and building resilience to the threats of flooding in Nigeria.

Nigeria needs a great leap forward. To escape poverty and fragility traps, Nigeria needs a radical transformation. That will not happen if it does not stare down and stomp out the factors of Institutional Neglect. Nigeria can reach a Human Development Index of 0.73 from its current 0.51 and attain a high HDI score by 2030 by investing in policies and reforms that promote human development and reduce the overall level of corruption. If Nigeria would tap into the resourcefulness of its citizen by providing opportunities through the provision of infrastructure, it can be one of the greatest countries in the world. As a Nigerian, my fingers are crossed!

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# Appendix

Appendix 1

## Questionnaire for victims of flooding: Classification of responses

Question 1		What is your occupation?			Total
Location		Response 1 Farming	Response 2 Fishing	Response 3 Other	
Makurdi LGA	Wadata/Rice Mill	-	-	35	35
	Wurukun (Angwan Jukun)	-	20	20	40
	Gyado Villa	-	-	20	20
Katsina- Ala	Hausa Quarters	10	15	10	35
Agatu LGA	Ocholonya	30	30		60
Total Occupation		40	65	85	<b>190</b>

Question 2		Number in family?			Total
Location		Response 15-	Response 2 5+	Response 3 10+	
Makurdi LGA	Wadata/Rice Mill	5	20	10	35
	Wurukun (Angwan Jukun)	6	25	9	40
	Gyado Villa	3	12	5	20
Katsina- Ala	Hausa Quarters	3	20	12	35
Agatu LGA	Ocholonya	5	40	15	60
Total		22	117	41	<b>190</b>

Question 3		How long have you lived in the location?			Total
Location		Response 1 10 years -	Response 2 10 years +	Response 3 20 years +	
Makurdi LGA	Wadata/Rice Mill	10	15	10	35
	Wurukun (Angwan Jukun)	6	14	20	40
	Gyado Villa	5	8	7	20
Katsina- Ala	Hausa Quarters	-	15	20	35
Agatu LGA	Ocholonya	-	-	60	60
Total		21	52	117	<b>190</b>

Question 4		How many flooding incidents have you experienced?			Total
Location		Response 1 3-	Response 2 3+	Response 3 5+	
Makurdi LGA	Wadata/Rice Mill	4	22	9	35
	Wurukun (Angwan Jukun)	7	23	10	40
	Gyado Villa	5	12	3	20
Katsina- Ala	Hausa Quarters	4	9	22	35
Agatu LGA	Ocholonya	-	-	60	60
Total		20	66	104	<b>190</b>

Question 5		Why have you not relocated			Total
Location		Response 1 financial	Response 2 Family roots	Response 3 other	
Makurdi LGA	Wadata/Rice Mill	35	-	-	35
	Wurukun (Angwan Jukun)	30	10	-	40
	Gyado Villa	20	-	-	20
Katsina- Ala	Hausa Quarters	25	10		35
Agatu LGA	Ocholonya	50	10	-	60
Total		160	30		<b>190</b>



Question 5		How much warning do you receive before a flooding event?			Total
Location		Response 1 Enough warning	Response 2 Some warning	Response 3 No warning	
Makurdi LGA	Wadata/Rice Mill	-	3	32	35
	Wurukun (Angwan Jukun)	-	5	35	40
	Gyado Villa	-	-	20	20
Katsina- Ala	Hausa Quarters	-	-	35	35
Agatu LGA	Ocholonya	-	-	60	60
Total			8	182	<b>190</b>

Question 6		How was the government response?			Total
Location		Response 1 Shelter	Response 2 Relocation/ Rebuilding	Response 3 Other	
Makurdi LGA	Wadata/Rice Mill	20	-	15	35
	Wurukun (Angwan Jukun)	24	-	16	40
	Gyado Villa	8	-	12	20
Katsina- Ala	Hausa Quarters	-	-	35	35
Agatu LGA	Ocholonya	-	-	60	60
Total		52		138	<b>190</b>

Question 7		What are your plans for handling future flooding?			Total
Location		Response 1 Have plans	Response 2 No plans	Response 3 Waiting for government	
Makurdi LGA	Wadata/Rice Mill	-	35	-	35
	Wurukun (Angwan Jukun)	-	40	-	40
	Gyado Villa	1	19	-	20
Katsina-Ala	Hausa Quarters	-	35	-	35
Agatu LGA	Ocholonya	-	60	-	
Total		1	189		<b>190</b>



Sample letter of request for interview

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To whom it may concern:

Letter of request for informational interview

My name is Mrs. Susan Adegbe Agada. I am a PhD candidate at York University, Canada, in the Faculty of Environmental Studies. I am conducting a research into the incidents of flooding disasters in Nigeria with particular focus on the 2012 flooding event.

Your organization is uniquely positioned to provide my research with relevant information. I am hoping you might be willing to set up an informational interview at your convenience. I would be happy to come to your office to meet with you. You can reach me through the phone number or email provided in this letter or I can call within the next week, if you provide me a number, to arrange the meeting.

Thank you in advance for your time.

Sincerely,

Susan Agada Adegbe